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THE PHILOSOPHICAL REVIEW

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May, 1936

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THE
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VALUE AND REALITY IN THE METAPHYSICS OF SPINOZA*

ONE of the major problems in the study of metaphysics is the relation of value to reality. The question occurs, is value inseparable from reality? Is it prior in nature to reality or is the converse the case? Can it be defined internally, as an attribute of being, or is it ultimately to be defined externally as an independent category of thought which transcends being? My object in this paper will be to show that Spinoza attempts to combine the Platonic and Aristotelian traditions in dealing with this problem, and that this accounts for the equivocal nature of his theory and methods. As any discussion of Spinoza's metaphysics must centre about his conception of God or infinite substance, I propose to begin my analysis with an exposition of the main points in his proofs of the existence of God, and then proceed to show the implications of his thought in relation to the 'perennial' traditions.

In his first proof Spinoza attempts to demonstrate the existence of an infinite substance from the nature of substance, whose essence involves existence.[1] It is important that we stop for a moment to consider the significance of the statement that "the essence of substance involves its existence". Spinoza begins the *Ethics* by defining the Scholastic notion, *causa sui,* as "that whose essence involves existence; or that whose nature cannot be conceived unless existing". In defining *causa sui* in this way, Spinoza broke with the Scholastic and Aristotelian tradition. For the latter *causa sui* meant that which was not caused by another. The Latin term, though stated positively, had an entirely negative significance. The notion arose

* This article is based on a doctoral dissertation accepted by Yale University in 1932 entitled "The Idea of Value in the Metaphysics of Spinoza".

[1] *Ethics* I 7, 11.

from the thought that finite, contingent things, which required a cause for their existence, must ultimately be produced by something which was not itself caused by anything else. Spinoza, on the contrary, makes his definition entirely positive in significance even though he states it in a negative form.[2] A *causa sui* is not merely that which is not produced by another; it means, positively, that existence is an attribute or perfection of the essence of substance, so that its essence cannot be conceived without including its existence. The reader will easily recognize that this notion is fundamentally the same as that of St. Anselm, who claimed that the attribute of existence is inseparable from the idea of a most perfect being.[3] Spinoza differs from Anselm in that the latter makes existence an essential attribute of the most perfect being, whereas Spinoza maintains that this relation holds for any *causa sui*—though of course he soon tries to show that there is only one such cause. Spinoza, like St. Anselm, has not shown why existence is inseparable from essence in the case of a *causa sui;* he simply asserts dogmatically that such is his definition of anything which is a cause of itself.

The transition from the negative to the positive meaning of *causa sui* is clearly illustrated in the first six propositions of the *Ethics*. Spinoza demonstrates first of all that one substance cannot produce another (negative) and from this he immediately infers the positive proposition that "It pertains to the nature of substance to exist".[4] Logically, from the mere negative notion that something is not produced by another, we cannot infer the positive conclusion that its essence involves existence, so that its essence

[2] I cannot find any valid reason for Professor Wolfson's assertion (in his *Philosophy of Spinoza* I 127) that "*Causa sui* like the medieval 'necessary existence' is primarily nothing but a negation meaning causelessness, and to Spinoza it is only a shorter way of saying that the essence of substance involves existence". He admits, strangely enough, that the later or negative part of Spinoza's definition is positive in meaning! He says (129): "The term *causa sui* similarly in Spinoza is not a mere negation meaning causelessness; it means also something positive: it is an assertion of self-sufficiency and hence actual existence. He thus says in the second part of his definition of *causa sui*, 'or that whose nature cannot be conceived unless existing'." I see no justification at all for interpreting Spinoza's definition in these two contrary ways. The definition is entirely positive in meaning, and, as I shall explain later, is the basis of his first 'ontological' proof. It is because Professor Wolfson does not realize that Spinoza's definition is entirely contrary to the Aristotelian definition, that he fails to see the real significance of the ontological proof.

[3] *Proslog.* ch. iii.

[4] *Ethics* I 6, 7.

cannot be thought apart from its existence. We must first show how or why the essence of substance involves existence.

This fallacy, so it seems to me, underlies Spinoza's first demonstration of the existence of God. He appears to prove that substance is a *causa sui*,[5] and that God or a substance consisting of infinite attributes necessarily exists,[6] or, what is the same, that the essence and existence of God are identical.[7] It is evident to the reader that this is only a nominal proof, because what needs proving is the validity of the definition of *causa sui;* otherwise we are assuming the whole proof at the outset. It is as if one were to say syllogistically: "That is a *causa sui* whose essence cannot be defined without attributing existence to it. God is a *causa sui.* Therefore God necessarily exists." Obviously the necessity here is purely formal and without any existential import.

But, aside from the fact that Spinoza's proof from the nature of substance is not valid, his argument is not even directly a proof of an absolutely perfect substance. From his major premise one can appear to prove the existence of any substance whatever. Spinoza's fourth proof is however a special proof for the existence of a most perfect being. The process of thought is somewhat as follows. The perfection of a thing gives it power of being, and therefore perfection is the efficient cause of things or that which gives them existence. Each thing has power of being according to its degree of perfection, and therefore a being of absolutely infinite perfection cannot be conceived otherwise than as existing, since it lacks no power which might negate its existence. Thus, according to this argument, only a most perfect substance can exist as a substance to whose essence existence necessarily pertains. There can be no substance infinite only in its kind. This proof is most clearly stated by Spinoza in the *Principles of Cartesian Philosophy.*[8]

> An object of a higher degree of perfection involves a fuller existence and a greater necessity of existence. Conversely, that which by nature involves a greater necessity of existence is more perfect. For as we cannot affirm the existence of nothing as we detract from the perfection of a concept and conceive its content to approach zero as its limit, so much do we detract from its possible existence. If we conceive this degree of perfection to be infinitely diminished even to zero, it will contain no existence or but an absolutely impossible one. On the other

[5] I 7.
[6] I 11.
[7] I 20.
[8] Lemma 1 after prop. 7.

> hand, if we increase the degree of perfection to infinity, we conceive that it has the highest possible existence, and so to be absolutely necessary.—Hence it follows that that which absolutely involves a necessity of existence is perfect being or substance.

The fundamental presupposition of this proposition is that the perfection of a thing is the efficient cause of its existence, or that which makes a thing practically possible. The whole force of the argument depends on the notion that a thing may be its own internal efficient cause. We have Spinoza's explicit statement to this effect in his correspondence[9] where he writes: "In order that I may know from which idea of a thing out of many, all the properties of the object may be deduced, I observe one thing only, that the idea or definition of the thing should express its efficient cause. —So also when I define God as the supremely perfect being, since this definition does not express the efficient cause *(for I conceive that an efficient cause can be internal as well as external)* I shall not be able to discover all the properties of GOD from it. But when I define God as a being absolutely infinite",[10] then Spinoza believes he can deduce all the properties that follow from the definition. Similarly he writes: "Finally it is to be observed that the cause by reason of which a thing exists must either be contained in the nature itself and definition of the existing thing, or it must exist outside the thing."[11]

It is clear from the above that Spinoza identifies the essence of a thing with its efficient cause. Finite things should be defined through their proximate external efficient cause; and God, whose essence is conceived through Himself, must be defined through himself alone, as if he were his own internal efficient cause. In the last analysis, what Spinoza is trying to do is to explain the practical possibility of being by saying that its perfection is what gives it existence. In other words, he is trying to show why there is being rather than non-being, and his reason is that perfection is the efficient cause of things. The same point is stated more explicitly by Leibniz in the following passage of his Essay on *The Ultimate Origination of Things.*

> From the very fact that something exists rather than nothing, there is in possible things, that is, in the very possibility or essence a certain

[9] Letter 60 to Tschirnhaus.
[10] See *Ethics* I def. 6.
[11] I 8, schol. 2.

need of existence, in a word, that essence tends of itself towards existence.—Whence it further follows that all possible things tend by equal right toward existence according to their quantity of essence or according to the degree of perfection which they contain. Hence among the infinite combinations of possibles one actually exists by which the most essence is brought into existence.

I have lingered over the above passage because I wished to make it clear that in all *(a priori)* proofs from the priority of perfection, one reasons from the possible or conceivable to the actual. Perfection is something conceived by the intellect, and yet it is regarded as making actual things practically possible through its tendency to realize itself. The perfection of a thing is the reason for its existence. This argument is fundamentally Platonic; for Plato tries to explain the world of things as originating from the Ideas or norms of perfection.

As against this the Aristotelians maintain that we can only explain being by actual being, that actuality is prior to potentiality or possibility. What is possible can be inferred only from what is actual. There can be no *a priori* proof for the existence of being from a consideration of potency or possibility. We infer the actual existence of a being of whom we predicate eternal existence because we postulate that there are actual things whose existence is temporal and contingent. *A priori* the non-existence of God is inconceivable only to God Himself, as St. Thomas points out.[12] From our human point of view we can only reason *a posteriori* from our observation of finite things. Spinoza himself seems to suggest this mode of argument when he writes in his correspondence[13] concerning "the impossibiltiy of supposing that things which do not exist necessarily in virtue of their own nature, are not determined to exist by something which does exist in virtue of its own nature, and which is a cause not an effect".

It is instructive to observe here that the Aristotelians, such as Maimonides and St. Thomas, agree with Spinoza in saying that the essence and existence of God are one and the same (I 20) but differ in the use they make of the conception. The Aristotelians

[12] *Summa Theologica*, Pt. I, Q. 2, #1. The proposition 'God exists' of itself is self-evident; for the predicate is the same as the subject. Forasmuch as we do not know the essence of God the proposition is not self-evident to us.
[13] Let. 12.

argue that we infer the existence of God or a being whose essence is inseparable from his existence only *a posteriori*. Our human mind conceives the existence of God as necessary in relation to things whose existence is contingent. That is to say, there is a logical necessity for inferring the existence of God, but we do not conceive *a priori* why it is practically necessary for Him to exist. All we can show from an analysis of the idea of God is that logically His essence is inseparable from His existence. But we can infer the actual existence of a being whose essence and existence are inseparable, or, in logical terms, we can give existential import to the idea of God, only by postulating the existence of finite things whose presence involves God as the cause of their existence. In brief, although the Aristotelians agree that the essence and existence of God are identical, they neverthelss find it necessary to separate the proof for the existence of God from the proof of His essence. They first prove that God is, and then proceed to show what He is in terms of attributes.

Spinoza, on the contrary, believes that the human mind is capable of showing *a priori*, or from an analysis of the idea of God, that God actually exists. From the idea of God's essence, or what He is, we can infer His existence, or that He is. This Spinoza tries to show in two ways; first, by saying with Anselm that actual existence is an attribute of a most perfect substance, so that the idea of its essence involves belief in its actual existence; secondly, by maintaining that the essence of God is, so to speak, the internal, efficient cause of His existence. In this second argument, existence is not an attribute or perfection of substance; existence is an effect of perfection.

In short, my point is that Spinoza and the Aristotelians affirm that the essence and existence of God are identical. But Spinoza proceeds to demonstrate the existence of God from the idea of His essence, whereas the Aristotelians maintain that logically, in relation to our mind, they must be separated. According to the Scholastics, we must first show that God is and then explain what He is analogically by negation of finite things. It is instructive to note that Spinoza himself, in the *Short Treatise*, explicitly separates his chapters in the Scholastic manner by first explaining that God is and then stating what He is. This however is only a nominal simi-

larity—the result of habit. The real logic involved is entirely different.[14]

There is another type of proof implicit in Spinoza's works which deserves attention, even though Spinoza himself does not explicitly introduce it as a special proof. This proof is suggested in the treatise on *The Improvement of the Understanding,* and I should call it the proof from the judgment of value. His argument is that the knowledge of a most perfect being is prior to every other kind of knowledge, because we can only estimate the truth-value or degree of truth of our ideas, if we have an innate knowledge of the most perfect being who reveals himself directly to the mind. Thus Spinoza writes at the beginning of the *De Emendatione:* "A true idea must necessarily first of all exist in us as an innate instrument *(innatum instrumentum)* and when this idea is apprehended by the mind, it enables us to understand the difference between itself and all other perceptions.—That method will be most perfect which affords the standard of the given idea of the most perfect being whereby we may direct our mind."

The above argument is essentially Platonic. We begin with the fact that we make value-judgments or estimate the degree of truth of our ideas, and the perfection of things. From this we infer (as Plato does in the *Phaedo*) that such judgments would be impossible unless there were an innate absolute norm of truth and perfection in relation to which all things are conceived. The idea of absolute perfection can never be derived by abstraction from the perceived sense-qualities of imperfect things. We can judge things as more or less truly what they ought to be, because we have an innate knowledge of the standard of all perfection, which is God (Plato's Idea of the Good). A variation of this proof occurs

[14] Spinoza was conscious of the difference between himself and the Aristotelians. Thus we find him saying in the *Short Treatise* (ch. 1): "God however who is the first cause of all things and also the cause of himself (*causa sui*) makes himself known through himself. Hence one need not attach much importance to the saying of Thomas Aquinas, namely, that God could not be proved *a priori* because He has no cause." According to Spinoza, existence is necessary to the essence of God, so that we no sooner conceive the idea or essence of God than we acknowledge His existence. According to St. Thomas, the existence of God cannot be proved *a priori* because then we should have to conceive of God as producing Himself; we should have to show why the existence is practically necessary. Spinoza attempted to get around the difficulty by regarding perfection as the internal efficient cause of existence.

in the *Short Treatise* where he writes: "If a man has an idea of God then God must exist *formaliter*. Now man has an idea of God. Therefore. . . ." "This implies that a finite understanding, unless it is determined by something external, cannot through itself know anything. . . . If then man has the idea of God, it is clear that God must exist *formaliter*. . . . Now that man has the idea of God this is clear, because he knows His Attributes, which attributes cannot be derived from man himself because he is imperfect. And that he knows these attributes is evident from this, namely, that he knows that the infinite cannot be obtained by putting together diverse finite parts."

We should bear in mind here that the argument from the value-judgment differs essentially from the ontological argument previously explained. In the ontological argument we try to prove *a priori* from the idea of an absolutely infinite substance that its essence involves existence. Spinoza's main argument is that essence conceived as quantity of perfection determines existence, and therefore God or an absolutely perfect being necessarily exists. The argument from the value-judgment however is really *a posteriori*, and is a variation of the cosmological argument.[15] We begin with the fact that we make value-judgments, and seek for an ultimate cause which will explain their possibility. Similarly, we have the idea of a most perfect being and seek for a cause of the idea in something infinite. In both instances, the argument is *a posteriori*. The use of the term 'perfection' in the ontological argument and in the value-judgment should not mislead us into ignoring the fundamental difference between them.

Now that I have completed my brief exposition of Spinoza's proofs of God, we are in a position to analyse his theory and see what bearing it has on the problem of value. So far our main concern was to discover the logic of his argument and the facts

[15] The argument from the value-judgment is similar to St. Thomas' Fourth Proof for the Existence of God in the *Summa Theologica*. St. Thomas' argument rests on the principle that there are observable degrees of truth and being and this involves approximation to an absolutely perfect being. Professor Gilson in his book, *The Philosophy of St. Thomas* (ch. v) shows convincingly that this argument is different from the ontological argument of St. Anselm, and is really a special form of the cosmological or causal proof.

of his position as we were able to interpret them. In what follows I shall attempt to estimate the validity of his procedure.

The first point I wish to emphasize is that Spinoza goes contrary to his own assertion that we must derive all ideas from the knowledge of God, by beginning his *Ethics* with propositions about substance and attributes. As a consistent Platonist he should have begun his *Ethics* like the *Short Treatise* with proofs of the existence of a most perfect being. If perfection is the efficient cause of being, and if it is also the norm of truth in relation to which all things are conceived, then the starting-point of all deduction should be the idea of absolute perfection. Spinoza's proofs from the priority of perfection are quite intelligible by themselves and require no references to substance and attributes—as is shown by the fact that he himself does not refer to the earlier propositions in these proofs. Furthermore, we have his own explicit statement to the effect in the *Ethics* where he writes: "For although the divine nature ought to be studied first because it is first in the order of knowledge and the order of things, they think it last".[16] Yet in spite of this declaration we find that he devotes the first ten propositions of his *Ethics* to a consideration of substance in general without referring to the idea of God.

The question may well be raised; what is the reason for Spinoza's irregular procedure? The answer I believe is that he was working with two contrary theories, namely, the Platonic and Aristotelian. In order to illustrate this contradiction explicitly I shall endeavor to make clear some of the fundamental principles of Platonism and Aristotelianism and show their application to Spinoza's argument.

The basic Platonic thesis is that a thing is real in virtue of the perfection of its form. The forms themselves are incapable of activity because action involves change and becoming, and the ideas as forms of being are not subject to change. There is one implication of Platonic theory that is not frequently drawn, namely, that for Plato, as later for Aristotle and Spinoza, perfection and reality are one and the same thing. It is the completeness and the precise mathematical ratios of the forms which gives them being; and hence the various forms of perfection are

[16] *Ethics* II 10 note.

also forms of being. Perfection is not prior to being and being is not prior to perfection; they are identical and mutually involve one another.

There is however another aspect to Plato's metaphysics, namely, that the Idea of the Good, or in modern terms, the Idea of Value, is prior in nature to being. This I take it is the significance of his statement in *Republic* VI:

> Now that which imparts truth to the known and the power of knowing to the knower is what I would have you term the Idea of the Good, and this you will deem to be the cause of science and of truth insofar as the latter becomes the subject of knowledge; and as in the previous instance, light and sight may be truly said to be like the sun and yet not to be the sun, so in this other sphere, science and truth may be deemed to be like the good but not the good; the Good has a place of honour yet higher. Now you would say, would you not, that the sun is not only the author of visibility in all visible things but of generation and nourishment and growth though he himself is not generation. . . . In like manner the good may be said to be not only the author of knowledge to all things known, but of their being and essence and yet the good is not essence but far exceeds essence in dignity and power.

Here it seems evident that Plato is maintaining that the Idea of the Good is prior to all forms of being and, like the sun, is the cause of being and becoming. From Plato's words I think we can legitimately draw the inference—though he himself did not formulate the problem—that value is external to or transcends reality. That is to say, the Idea of Value is an ultimate concept which must be conceived through itself and not through something else, as an attribute is conceived in relation to a substance. The Idea of the Good is not itself a form or attribute of being. In the last analysis forms of being are conceived as good by reference to an Idea of the Good from which they derive their worth and being.

It seems to me that the above conception is basically different from Plato's other notion, namely, that the being and perfection of a thing are one and the same. If we consider the forms of being by themselves their perfection and reality are identical. The perfection of the form is not prior to its being and in no way determines it. That is to say, the value of a form of being is conceived internally or entirely with reference to that being itself. It is not

necessary to transcend the form of being in order to conceive its value. Value and being are aspects of one and the same thing. Whether Plato himself ever reconciled these two theories we may leave open to question. Our main object at present is to point out the problem involved.

Let us now proceed to analyse the Aristotelian theory. As said, both Plato and Aristotle agree that perfection and reality are one and the same thing, but they differ as to their interpretation of reality. Aristotle's main criticism of Plato is that the latter does not explain how the Ideas can be unmoved and yet be the cause of the becoming of things. As against Plato, Aristotle points out that what makes a thing real is its power of activity or movement. The reality of a thing does not depend on its perfection of form but on its perfection of activity or realization of potencies. The form or shape is indeed necessary for the definition, but what distinguishes the real thing from the appearance is its power of activity; *e.g.*, a picture of a man is an imitation of a man because it lacks the living individual's power of activity even though its form or shape be more perfect than that of any living man. In brief, we must distinguish between perfection of form and perfection of power of activity. For Aristotle a thing has perfection of being when it is most completely actual or active. God or Pure Form is most perfect because, being free from all potency or matter, He is most completely actual or active.

So far then we can say that for Aristotle the value or degree of perfection of anything is to be explained internally or with reference to the things themselves. Perfection is, as Spinoza would say, an attribute of being and is yet one and the same thing as being. Perfection is being considered in relation to the mind which estimates its quantity.

There is, however, as Von Rintilen points out,[17] another part of Aristotle's theory where he conceives of value as external or transcendent. This notion is introduced when he comes to consider the status of final causes. The final cause is conceived as something which determines the course of development of a thing; it is the entelechy, that which makes the thing what it is in the end. From this point of view, the final cause is prior in nature

[17] *Der Wertgedanke in der europäischen Geistesentwicklung* I.

to the actual thing. The final cause is that which the thing realizes or actualizes. This explains the important rôle of final causes in Aristotle's epistemology. As a biologist he is always explaining the nature and function of things with reference to their end or purpose. It is this aspect of his thought which Francis Bacon, Hobbes, and Spinoza, oppose.

I have tried to make it clear in the foregoing that the thought of both Plato and Aristotle offers us evidence of the same problem concerning the relation of value and reality. They both agree that perfection and reality are identical or inseparable, although they differ as to how reality is to be conceived. Plato urges that Reality is to be interpreted mathematically in terms of forms of being, and Aristotle maintains that reality is to be interpreted biologically, as that which has power of activity. But, in spite of their differences, I find that they both leave the ultimate problem unsolved. Both imply that value and reality are identical and yet maintain that Value must be conceived as prior to being. Plato finds it necessary to introduce the Idea of the Good and Aristotle thinks the facts require the notion of the entelechy and the theory of the Unmoved Mover, or cosmic final cause.

The above analysis of the value-problem in Plato and Aristotle will enable us, I believe, to appreciate the conflict of traditions in Spinoza's thought. Let us consider. As explained, Spinoza conceived of perfection as prior in nature to being, and hence he tried to prove that from the Idea of what God is we can infer that He is. Value ultimately may be regarded as the efficient cause of being, that which makes being practically possible. But then again, as with Plato and Aristotle, there is also another aspect to Spinoza's thought, namely, that reality and perfection are one and the same thing.[18] On this basis it would appear that the ontological proof of God is impossible. Perfection is not prior to reality and reality is not prior to perfection; they are one and the same thing judged from different points of view in relation to the human mind. Reality is perfection insofar as the mind conceives substance as constituted by infinite attributes each of which expresses its reality in a different way.

Here, as I interpret the history of philosophy, the argument of

[18] II def. 6.

St. Anselm comes to the rescue. St. Anselm submitted, as a proof for the existence of a most perfect being, the fact that we have the idea of such a being. If the most perfect being existed only as a possible notion in the mind and not as something actually independent of it, then a greater than he would be conceivable, namely, one who had the perfection of actual existence.[19] What Anselm had done was to make existence itself a perfection, and in this way he confused the category of substance with the category of value. Perfection, the good or value, which originally in Plato denoted a distinct Idea with a validity of its own, became a term used to designate some character of being. This initial error of Anselm was I believe, the source of confusion in the thought of Descartes and Spinoza. Spinoza, for example, states a variation of this proof in the *Short Treatise* when he writes: "Whatever we clearly and distinctly know to belong to the nature of a thing, we can also truly affirm of that thing. Now we can know clearly and distinctly that existence belongs to the nature of God. Therefore." Similarly, as explained, Anselm's argument is implied by Spinoza in his first proof in the *Ethics*. The definition of *causa sui*[20] already involves the Anselmian notion that we can attribute existence to a thing just as we do any other attribute, so that the attribute of existence is inseparable from the definition of the essence. In terms of value, this implies that values can be defined internally or entirely with reference to being. Value or perfection is not prior to being and the cause of its existence. Being is primary and all perfections are attributes thereof.

It is only fair to point out that the inference I make here is the exact opposite of what Anselm himself intended to make. He had in mind the Platonic theory that the Ideas as norms of perfection were more real than the objects of sense-perception which were only imitations of the Ideas. From this he inferred that the greater the degree of perfection of a thing, the greater was its degree of reality. Then, thinking about religious problems, he conceived the brilliant idea that the Idea of the most perfect being involved the greatest reality, so that one could not think of God without acknowledging His being. From the Platonic point of

[19] *Proslogium*, ch. iii. (Open Court Edition.)
[20] I def. 1.

view this was a valid procedure. But the chief difficulty with the Platonic theory is that Plato does not show what the exact relation is between the Ideas and actual things. He denies all power of activity to the Ideas (in the *Sophist*) because action involves change and becoming, and the Ideas as forms of being are not subject to change. Hence the Ideas do not "save the appearances", as Aristotle points out. *In other words, Plato does not tell us what the relation between essence and existence is.* He appears to assume in the case of the Ideas that they are one and the same. Now when Anselm tried to prove the existence of God, he came upon this difficulty. The only way out that he could see, was to make existence itself a perfection of a most perfect being. But this, as explained, was an illogical procedure and implied a metaphysics exactly contrary to the one with which he started. He began with the Platonic theory that perfection was prior in nature to actual existence; but, in trying to be more Platonic than Plato, in regarding existence itself as a perfection, he undermined his whole position. This error, I believe, Descartes, Spinoza and Leibniz corrected by trying to prove *a priori* from the idea of perfection why there is being rather than non-being. This they did by maintaining that Value is prior in nature to being and existence and is the cause of the latter.

One would imagine that it would be superfluous to point out that the ontological proof of God is essentially a value-argument based upon the doctrine of the inseparability of value and reality. Yet we find that the learned Professor H. A. Wolfson in his scholarly work on *The Philosophy of Spinoza* has failed to perceive this. Instead he informs us that "the ontological proof must ultimately rest upon a psychological basis".[21] The proof, he claims, may be reduced to the following form: "Everything which is immediately perceived to exist, exists. God is immediately perceived to exist. Therefore God exists".[22] This interpretation I maintain is entirely contrary to the whole great tradition in philosophy. Plato, Aristotle, St. Augustine, St. Anselm, Thomas Aquinas, Descartes, Leibniz, all have one great theme in common, namely, the inseparability of value or perfection and reality. The ontological proof is essentially metaphysical, not epistemological. In

[21] *Op. cit.* I 172. [22] *Ibid.* 176.

interpreting the proof in terms of 'clear and distinct ideas' Professor Wolfson is giving undue emphasis to Descartes' epistemology and neglecting his metaphysics. In brief, I should say that to interpret the ontological proof as an argument based on epistemology and psychology is to miss one of the main insights of traditional philosophy.

To return now to our analysis of Spinoza. The reader will recall that we became involved in a discussion of Plato and Aristotle when we attempted to solve the problem why Spinoza began his *Ethics* with the notion of substance instead of beginning with the idea of God. The above considerations should enable us to solve the problem now.

In brief, I should say that the reason why Spinoza began the *Ethics* with the notion of substance was that he agreed with Aristotle that substance or reality is that which has power of being.[23] This implies that perfection and reality and power of activity are identical, and hence that perfection or value can only be defined internally or as an attribute of being. This meant that he could only attempt to prove the existence of God by adopting Anselm's method of defining existence as an attribute of essence. He did not realize that in making existence a perfection or attribute of essence, he had denatured the term perfection of its primary significance and thereby confused the category of value with that of substance. Now in the fourth proof of the *Ethics* he introduces the Cartesian proof and makes perfection prior in nature to being and the cause of its existence. Had he held to this view consistently he would have begun his *Ethics* with the fourth proof of the seventh proposition, as that proof requires no reference to the earlier propositions.

By way of answering the problems we raised at the beginning of this paper, we can say that Spinoza, like Plato and Aristotle, maintains that value and reality are inseparable. But when it comes to stating precisely wherein their relation consists, I believe he involves himself in contradiction. Explicity he wishes to follow the Aristotelian doctrine that reality is power of existence and action,[24] and hence he implicitly defines value internally, as an attribute of being, by adopting the Anselmian definition that ex-

[23] I 34. [24] I 34.

istence is an attribute of essence in the case of the most perfect being. But later we find him thinking with Plato that the value-category is separate from all forms of being and is the cause of being. It is true that he does not make perfection something which transcends being as Plato conceives the Idea of the Good. But the fact that he regards value or perfection as logically prior implies the notion that the value-character is other than the category of being or substance, so that being is understood or conceived through value.

As Professor Urban has pointed out in his *Intelligible World*, the relation of value to reality constitutes the ultimate metaphysical mystery. Plato, Aristotle, and Spinoza, agree that value and reality are inseparable. But when it comes to showing the precise relation between them, we find that they are all maintaining apparently contradictory theses. They begin by identifying value or perfection with reality, but sooner or later they feel forced to separate the category of value from the category of being. Both Plato and Aristotle are forced to separate value from being, because they recognize the validity of the final cause as an ultimate explanation. And Spinoza, although he explicitly grants only efficient causes, agrees with Plato and Aristotle that being in itself is not ultimately intelligible, and introduces perfection as the reason or cause of being. Spinoza did not realize, as Plato and Aristotle did, that perfection insofar as it is prior to being is incapable of efficient activity, and can act only as a final cause.[25]

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[25] One could go on to demonstrate the conflict of traditions in Spinoza's conception of ethical values, but as this is not my purpose here I shall draw this paper to a close. In a treatise which I am preparing for publication entitled "The Conflict of Traditions in the Philosophy of Spinoza" I am developing this thesis in detail.

WILLIAM OF OCKHAM'S NOMINALISM

WILLIAM OF OCKHAM stands out from a background of the medieval twilight as a peculiarly neglected figure. While he is far from being adequately treated by continental writers, he has no place whatever in the world of English literature. He is certainly a prophet not accepted in his own country. Überweg's usually very comprehensive bibliography in his *Grundriss*[1] mentions up to the year 1928 thirteen monographs dealing with Ockham: 8 in German, 2 in French, 1 in Dutch, 1 in Latin, and none in English. This regrettable neglect may be explained by the historical circumstances connected with Ockham's works. Of the works attributed to him we know of 20 philosophical and theological treatises, 8 of which are in print and 12 in manuscripts. He wrote 11 political treatises, 5 of which were printed and 6 are in manuscripts. This means that only 42 per cent of Ockham's works was ever printed, the rest being still in manuscript. If we add that his printed works were never re-edited after the year 1675, the scarcity of books on him may be explained by the difficulty in consulting the original sources.

The neglect which William of Ockham has suffered is justly to be resented if we consider the fact that the Oxford Franciscan is generally accepted as a philosopher of first-class importance. His significance grows to almost epochal dimensions if we follow up the tremendous influence his nominalism or terminism exerted on the ages. It may be safely stated that the philosophical development of our modern period, empiricism and subjectivism, anti-intellectualism and pragmatism, and our total positivistic preoccupations, can be traced back to the cell of the restless and energetic Franciscan and to his nominalism. He is not only the *Inceptor omnium Nominalium monarcha,* the *Invictissimorum Nominalium inceptor,* the *Achademie Nominalium princeps* and the *Nominalium antesignanus,*[2] but a very prominent herald of modern philosophy.

The following is an attempt to delineate Ockham's essential

[1] Friedrich Überweg's *Grundriss der Geschichte der Philosophie* (Berlin, 1928) II 781.

[2] Ancient titles of Ockham quoted by Überweg, *Grundriss* II 575.

contribution, his nominalistic or terministic theory of knowledge to which he owes his chief fame.

It would be a task comprising practically the total domain of cultural developments in the West to point out the causes which so devastatingly shook up the realistic philosophy of concept at the end of the Middle Ages. The universal or class-concept, discovered by Socrates as the rock of knowledge, extended by Plato to cosmic bases and developed by Aristotle as the indwelling principle of all actuality, was eagerly accepted by both the Augustinian and Thomistic lines of thought as surety to guarantee the solidity of science and life. Logic was projected into ontology as a pertinacious pursuit of self-assertion to impose anthropology upon the world. The stubborn facts of human defeat were bound to open the eyes sooner or later to the futility of such anthropocentrism. Realism, which had been dominant throughout the centuries of the Middle Ages, received its first serious blows under the onslaughts of Roscelin and Abelard. The historical rôle, however, of undermining its foundations in a fatal manner, was reserved to William of Ockham. After him moderate realism found its exclusive home mostly in the recluse of church institutions.

The road to his task was immediately prepared by what was called in Ockham's time the *Logica modernorum*, a logic presenting a reborn Phoenix-bird of long forgotten grammatical interests once cultivated by the Stoics. This logic as developed at the end of the thirteenth century was a grammaticized logic and a logicized grammar.[3] It dealt with the nexus between grammatical forms and thought-forms. The chief representant of this new logic was the *Summulae logicales* of Petrus Hispanus, a book that had a dominating influence up to the sixteenth century. In the famous seventh chapter of the *Summulae*, Petrus Hispanus develops the *proprietates terminorum*, a treatise dealing with the grammatico-logical properties of words such as: *significatio, suppositio, ampliatio, appellatio, restrictio, distributio, exponibilia.* The chief property of a word is considered the signification with the supposition following it. "The signification", says Petrus Hispanus, "is prior to supposition; they differ in that the signification belongs

[3] Carl Prantl, *Geschichte der Logik im Abendlande* (Leipzig, 1867) III xvii 73.

to a word, while the supposition belongs to a term already composed from the word and signification".[4] The new logic undertook to investigate the various modes of signification and initiated a new literary form called "de modis significandi" widely cultivated in the ensuing period.

There cannot be the least doubt that the widespread cultivation of grammaticized logic with its unceasing investigation of the significatory modes of the noun, pronoun, verb, adverb, participle, conjunction, preposition, and interjection, was the immediate occasion for Ockhamist nominalism. Logic, which used to have the character of a scientific methodology,[5] now, by its intimate connection with grammar, became a *scientia sermocinalis*, that is, a science dealing not with aspects of truth and error, but with meanings and significations.[6] Grabmann translates the word *grammatica speculativa* as *Bedeutungslehre*, and Heidegger the doctrine of the *modi significandi* as the doctrine of *Bedeutungsformen*.[7] Logic, which used to teach *vere loqui*,[8] began after its alliance with grammar to teach *recte loqui*. Interest was centered now not on the right relationship to the ontological realm in order to obtain truth, but on the content of thought immanent in words, and on the function of the various forms of thought. Thus the *modi essendi et subsistendi* went more and more into oblivion and the *modi significandi et intelligendi* moved into the center of interest. Stress was put on their intentional inexistence rather than on their ontological referents. After such forerunners as Durandus of St. Pourçain (1270-75-1334)[9] and Peter Aureoli

[4] *Summulae logicales* VII 1, 1, 2 (f. 209A) in Prantl, Chap. xvii, 51, Anm. 201.

[5] Lambert of Auxerre, *Summa logicae*, Cod. Sorbonn. 1797, in Prantl xvii 26, Anm. 100: "Logica est scientia discernendi verum a falso per argumentationem."

[6] Roger Bacon, *Opus tertium* xxviii 104, in Prantl xvii 122, Anm. 560: "Cum logica comprehendo grammaticam, quia communi nomine utraque logica dicitur, *i.e.*, sermocinalis scientia, nam logos idem est quod sermo in una significatione."

[7] Martin Grabmann, *Mittelalterliches Geistesleben* 117.

[8] *William Shireswood*, Cod. Sorbonn. 1797, in Prantl xvii 12, Anm. 32: "Quasdam autem [anima] facit operationes, per quas deveniat in scientiam, et de his est sermocinalis scientia; haec autem tres habet partes: grammaticam, quae docet recte loqui, et rhetoricam, quae docet ornate loqui, et logicam, quae docet vere loqui."

[9] *Sent.* II, dist. 3, q. 7, fol. 107, I Q, in Maréchal, *Le point de départ de la métaphysique*, Bruges-Paris, 1923: "The universal does not precede the act of intellect, but rather is produced by the act of intellect."

(d. 1322),[10] it was William of Ockham who came to unfold fully the implications of this changed interest and develop on its basis his nominalistic theory of knowledge.

Ockham's epistemology centers entirely around the notions of signification and supposition, as the following will elucidate. The task of epistemology is to investigate the problem of the possibility of knowledge. What is Ockham's position concerning this problem? How does he build the bridge which is supposed to connect the external world with the mind? His first task is to clear the ground by rejecting the 'copy' or 'species' theory. The realists, in order to explain how the material world can affect the immaterial soul, inserted the sensible and the intelligible species considered as something immaterial. The species was the vehicle whereby the copy or similitude of some extramental reality arises in us. Ockham rejects the sensible species as superfluous, and the intelligible species as impossible. For if matter cannot affect the immaterial soul, how can it produce the immaterial species? Again, if matter cannot act at a distance on the soul without the species, how can it produce the species at a distance?[11]

Having eliminated the 'species' or intentional copies of things from the mind, he had to square accounts with the theory which assumed a cognitive 'adequation' between the intellect and the extramental thing. According to Aristotelian or moderate realism the universal concept or intention in which the species crystallizes itself by the efficiency of the active intellect has an ontological counterpart corresponding to it conceived by Aristotle as immanent (ἐνυπάρχον) in the particular things. Truth is an adequation of the knowing mind with this ontological counterpart. To be sure, the 'universale in re' is not a subsisting something in the thing. The form, as a universal, does not exist except in the mind.[12] Nevertheless, it is in the thing as the formal principle individualized in and by the material substratum. Says St. Thomas:

[10] *In Sent.* I, d. 23, a. 2, in Überweg, *Grundriss* II 527: "It is manifest that the aspect of man and animal in so far as it is distinguished from Socrates is a fabrication of the intellect and is nothing but a concept."

[11] *In Sent.* II, qu. 15, O. I am using the 1495 edition printed in Lyon, now the property of the library of the Peabody Institute.

[12] St. Thomas Aquinas, *Contra gent.* I, c. 65: "Universalia non sunt res subsistentes, sed habent esse solum in singularibus." *Contra gent.* I, c. 44: "Forma per modum universalem non invenitur, nisi in intellectu."

"For if we consider the nature of gender and species itself, as it is in the singular objects (*prout est in singularibus*) we will find it somehow as the formal principle with respect to the singular objects."[13] This formal element is the ontological foundation of our conceptual knowledge and the chief object of all scientific investigation.

This realistic account of the possibility of knowledge receives the most careful consideration from Ockham. His commentary to the *Sentences* of Peter Lombard contains a veritable arsenal of proofs against it. "All whom I meet agree", so he begins, "by saying that the entity which is somehow universal is really in the individual, although some say that it is distinguished really, others that it is distinguished only formally, and some that it is not distinguished at all according to the nature of the thing, but only according to reason or by the consideration of the intellect. All these opinions coincide in that the universals are somehow from the side of the thing, so that they are universal really in the singular objects themselves."[14] He calls this opinion a "false and absurd view".[15]

From the immense number of arguments which Ockham lines up against the realistic universal we can present only a few typical ones.

Against the view of St. Thomas he argues thus: If the universal exists as something really distinct from the individual it must be numerically one and, therefore, something singular and not universal. But how could a singular thing as such exist in many things at once?[16] If humanity were a thing different from the singular individuals, one and the same thing would be in many individuals, which would be condemned in Judas and saved in Christ and, hence, there would be something condemned and miserable in Christ, which is absurd. In much the same manner, God could not, then, annihilate an individual without destroying all the individuals of the same genus.[17]

Against the formal distinction of Duns Scotus this is his argument: It is impossible to distinguish the common nature from the

[13] *Summa theol.* I, qu. 85, art. 3.
[14] *In Sent.* I, dist. 2, qu. 7, F.
[15] *In Sent.* I, dist. 2, qu. 4, D.
[16] *In Sent.* I, dist. 2, qu. 4, D.
[17] *Summa tot. log.* II, 2, f. 25 v. B, in Prantl's *Geschichte der Logik* xix 350, Anm. 794.

individual difference formally without falling back to a real distinction. If "there is in Socrates a human nature which is contracted to Socrates by an individual differentia, which is not distinguished really, but formally, from that nature, we should have a thing which was universal and particular at the same time." Therefore "it is impossible to admit that in created things something differs formally without being distinguished really. But granting this distinction, the view is still untrue. If nature were common in that manner, it follows that there would be just as many species and genera as there are individuals."[18] In that case consequently, there is no place left for a common nature. The objection that the universal is of the essence of Socrates, and not the total essence of Socrates, does not have any strength. In that case "every individual would be an aggregate of an endless number of actual things, namely of those common features which are predicated of it".[19] This argument is directed specifically against the *'formalitates'* or metaphysical cross-sections of Duns Scotus, which were supposed to subsist actually in the particular.[20]

Against the third view maintained by such men as Aegidius Romanus (1247-1316) and Walter Burleigh (d. after 1343), which identifies the universal with the particular, and yet nevertheless finds a ground to distinguish them by a virtual-mental distinction, Ockham points out that there is no justification whatever for such distinction. The intellect must not change the thing. If it is individual and particular, it should not be declared universal.[21]

The result of Ockham's attacks against the realistic universal is summed up in the following manner: "To conclude, I say that there is no such a thing as a universal, intrinsically present in the things to which it is common."[22] "No universal . . . is a thing existing in any way outside of the soul, but everything which can be predicated of many things is by its nature in the mind either psychologically (*'subjective'*) or logically (*'objective'*) and nothing of that sort is of the essence or quiddity of any substance."[23]

[18] *In Sent.* II, qu. 9, C. C.
[19] *In Sent.* I, dist. 2, qu. 4, D.
[20] *In Sent.* I, dist. 2, qu. 6: "Ista opinio est, ut credo, opinio subtilis doctoris, qui alios in subtilitate iudicii excellebat."
[21] *In Sent.* I, dist. 2, qu. 7, L.
[22] *In Sent.* I, dist. 2, qu. 4, D.
[23] *In Sent.* I, dist. 2, qu. 8, Q.

After having discarded the realistic universal Ockham continues to work out in his own way the explanation of how knowledge is possible. It is precisely at this point that the *Parva Logicalia,* the seventh chapter of Petrus Hispanus' *Logic,* came to his help. By utilizing the new notions of speculative grammar he built his theory of knowledge and arrived at his nominalism. For the discarded theory of *copy* and *adequation* he substituted a new one: that of the *sign* and *signification.* Between the two theories there is a world of difference. In Ockham's view all our conceptions are mental signs which signify the external things. "A sign is anything that, as apprehended, presents something else to cognition."[24] "The intention wherewith I understand men is a natural sign signifying man, just as natural as a sigh is the sign of infirmity or pain. It is a sign which can stand for men in mental propositions."[25] Signs insofar as they stand in a proposition are called terms, *termini.* "A term is nothing else but the subject or predicate of a proposition as signifying something."[26] "The term is threefold: written, spoken and conceived. The words are signs subordinated to the concepts or intentions of the soul. First the concept signifies something naturally and then, second, the word signifies that same thing. The concept or passion of the soul signifies whatever it signifies naturally; the spoken or written term, on the other hand, does not signify anything except by voluntary agreement. The spoken or written term can change its signification at discretion; the concept-term, on the other hand, never changes its signification at anyone's pleasure."[27] The important word in these preliminary remarks of Ockham is the word 'natural'. It gives us the clue to everything he has to say concerning the conditions and validity of knowledge. The bridge that he intends to build from the mind to the world will be constructed out of the steel of natural significance.

Our analysis of Ockham's gigantic efforts to build a bridge will fall into two parts, treating of the hither and thither sides of the structure devised to span the chasm between the mind and the world. Let us concentrate, first, on our side of the mind-world relationship and investigate *the nature of mental signs* in their

[24] *Summa totius logicae,* I, 1, cap. 1.
[25] *Ibid.* I, 15, f. 6, v. B. [26] *Ibid.* C. 2, f. 2, v. A.
[27] *Expos. aurea,* Perierm. Prooem., in Prantl, *loc. cit.*

psychological aspect. What is a mental sign considered in itself, in its entity as a mental fact? Ockham calls it an "intention of the soul", a word derived originally from Avicenna. "An entity in the soul meant to signify something is called the intention of the soul. This subsisting something in the soul which is a sign of the thing and out of which mental propositions are composed, is sometimes called the intention of the soul, sometimes the concept of the soul, sometimes the passion of the soul, sometimes a likeness of the thing."[27]

Now, "what is that in the soul", we hear the author asking himself, "which is such a sign?" Ockham takes three views into account. According to the one, the mental entity that functions as a sign is a mere fictitious likeness, *quoddam fictum*, of the object without any psychological actuality of its own. It is a merely thought-out something, a purely logical fiction which is supposed to represent the external objects. Ockham eliminates this view on the same grounds on which he had cancelled the realistic species. Both the psychological entity of the species and the logical entity of the *fictum* impede cognition and are superfluous. According to another opinion, the mental intention which signifies is some quality of the soul, distinct really from the act of intellect because resulting from it, which as a resemblance of the external thing represents that thing. Even this view is against his famous law of parsimony, according to which *nunquam ponenda est pluralitas sine necessitate,*[28] or, expressed in another way, *frustra fit per plura quod potest fieri per pauciora.*[29] Therefore he adopts the simplest view, which we also find in Durandus, according to which "the passion of the soul is the act of intellect itself. This seems to me to be the most probable of all opinions",[30] "for all that can be saved by adopting something distinct from the act of intellect, can be saved without such distinction."[31]

This knowledge that the intention of the soul in its psychological entity is an act of intellect is to be extended now to the extremely important subclasses of the first and second intention.

[27] *In sent.* I, d. 27, qu. 2, K.
[28] *Summa tot. log.* I, 12, ed. Ven. 1522, fol. 6, r. A.
[29] *Expos. aur. Perierm.* Prooem. [31] *Summa tot. log.* I, 1, c. 12.

"The first intention is to be understood as a mental name meant to stand for its signified object. The second intention, on the other hand, is that which is a sign of such first intentions, *e.g.*, genus, species, and such others."[32] "The act by which the intellect understands an object outside the soul is called direct, and the act by which this direct act is understood is called reflex."[33] The first intention, then, is any mental act which directly and immediately signifies one individual object, like Socrates, or a class of individual objects, like man, animal. The second intention, on the other hand, is a mental act signifying a first intention, expressing for instance some characters of it, such as genus, species, individuum, and so on. The first intention is called by Ockham a thing, that is, something psychologically subsisting in the soul, while the second intention is not a psychological but a logical fact which is applicable to the things and is predicable of them. The distinction between these two kinds of intentions is very clearly expressed in these words.

> The logician principally has to consider the distinction between the names of first and second intention. And precisely herein lies the difference between the names of first and second intention, that the names of the first intention are those which when they substitute directly, stand precisely for things, *leaving out of question their predicability of things.* The names of the second intention, on the other hand, stand for *various modes which are predicable of things.*[34]

In connection with the division of intentions we should become acquainted with Ockham's division of names or signifying words. Names which directly signify our intentions, be they of the first or second type, are called names of first imposition. Names which signify such names of first imposition are called names of second imposition, such as name, verb, substantive, adjective, adverb, etc.[35]

The notion of second intention, being identical with that of the universal, leads us to the most important part of Ockham's epistemology. The universal in his opinion is an intention of the soul, which as a mental fact is something singular in the mind. "Every universal is one singular thing and is universal only by

[32] *Summa tot. log.* I, 12, f. 6, r. B.
[33] *Quodlib. II*, qu. 12, in Prantl, *loc. cit.*
[34] *In Sent.* I, dist. 23, qu. 1 D. and J.
[35] *In Sent.* I, dist. 22, qu. 1, C.

signification of many things. The universal is one and a single intention of the soul meant to be predicated of many things; insofar, however, as it is a single form subsisting really in the intellect, it is called singular."[36] How now does the universal character enter into a singular intention? It enters by way of abstracting from various individual objects one and the same element, on the basis of which all of them can be held together in one representative act. This process is entirely natural and spontaneous without any planned activity of the intellect and will, and is to be understood in terms of a cause-and-effect relationship. "The universals and second intentions are caused naturally without any activity of the intellect and will by the knowledge of simple terms. They come about in this manner: first, I apprehend in particular some singular objects intuitively or abstractly."[37] "This is caused by the object or by a predisposition from a former act. This act consummated, presently, if there is no obstacle, another act follows, distinct from the first and terminating in something of the same kind of a logical being which was seen before in the psychological being. This second act *produces* the universals and second intentions."[38]

The origin of the universal, then, is traced to external objects and to their effects in the soul which are the intuitions. "No intellectual act", we learn, "is without a phantasm for the reason that all intellectual cognition necessarily presupposes in our present status sensitive imagination both of the exterior and interior sense."[39] Now in Ockham's doctrine every intention of the soul, whether first or second, intuited or abstracted, is significatory. Hochstetter, analysing this significatory character of intuitions, calls our attention to its remarkable resemblance to Helmholtz's theory of *Sinnliche Zeichen*, according to which "the same object exerting its influence under the same circumstances brings

[36] *Summa tot. log.* I, 1, c. 14.

[37] "Abstract knowledge can be taken in two ways" for Ockham. "One way refers to some thing abstracted from many singular objects. In this sense abstract knowledge is nothing else than the knowledge of some universal which is abstracted from any things. In the other sense, abstract knowledge is taken as what it abstracts from the existence and non-existence and from other conditions which happen contingently to the thing or are predicated of it" (*In Sent.* Prol. qu. 1, Z).

[38] *In Sent.* II, qu. 25, P.

[39] *In Sent.* Prol. qu. 1, V. V.

forth the same sign and different impressions correspond always to different signs".[40] This preliminary intuition is the intermediary between the external object and the intellect, which leaves a certain trace in us exactly as in the modern doctrine of the substitute stimulus. "Something not previously there is deposited behind in the imaginative faculty, mediated by the intuitive cognition of particular sensation",[41] "some kind of a predisposition bent to imagine the previously sensed object."[42] This substitute stimulus may revive the original intuition and act in its stead as a cause with reference to the intellect. Repeated causal actions of the external object or of the substitute stimuli create in us in Ockham's expression a certain habit,[43] with an inclination to revisualize the previously sensed object. This process is described with great analytic power in the following words.

> I am certain that I understand a stone in virtue of the sight of the stone and in virtue of the primary vision. I am certain that I understand by experience because I see the image of the stone. The certainty of understanding the stone, however, comes by reasoning from effect to cause. I know fire by smoke when I see smoke alone, because I have on other occasions seen smoke caused by the presence of fire. In the same manner, I know the stone because on other occasions I have perceived intellectually the production of such an image in me.[44]

The process of abstraction in these words is described entirely in terms of similar experiences caused by objects, through intuitions or habits, resulting in a new or second intention: the universal. The distinctive mark of every universal is to be a sign for all the individuals involved in the abstraction. "The intention of the soul is universal, because it is a sign which can be predicated of many."[45] The process of abstraction, then, ends in an intentional sign, which reciprocally refers back to the *inferiora* in a significatory manner and is predicable of them.

In the notion of predicability we have reached the very essence of the universal. Ockham is very emphatic in pointing out that, although the universal is embedded in a psychological act, yet

[40] Hermann von Helmholtz, *Die Tatsachen in der Wahrnehmung* 222, in Erich Hochstetter, *Studien zur Metaphysik und Erkenntnislehre Wilhelms von Ockham* (Berlin, 1927) 118.

[41] *In Sent.* II, qu. 15, C.

[42] *In Sent.* II, qu. 17, S.

[43] *In Sent.* II, qu. 15, C and qu. 17, S: "Habitus quidam inclinans ad phantasiandum objectum prius sensatum."

[44] *Quodlibet.* I, qu. 14.

[45] *Summa tot. log.* I, 1, c. 14.

according to its inmost essence it is not a psychological, but a logical entity. He refuses to call it an idea,[46] because ideas and images are psychological entities. To quote the *Venerabilis Inceptor*:

> The universal is not some real thing having a psychological being (*esse subjectivum*) in the soul or outside of the soul. It has only a logical being (*esse objectivum*) in the soul and is a sort of fiction having the same sort of entity in the logical realm as the external thing has in the psychological realm. Figments have no psychological being in the soul, for they would then be really things and, thus, a chimera and centaur and other such things were all real things. There are, then, certain entities which have only logical being. In the same way, propositions, syllogisms, and such other things as logic treats, have no psychological being, but only a logical being: and so *their being is their being understood*.[47]

To be sure, when Ockham calls the universals fictions, he is far from subscribing to the theory of *fictum* or *idolum* which he refuted before. That theory was an explanation of the psychological existence which the first and second intentions have in the soul, while this conception adds the logical character to second intentions or the universals, the psychological status of which he described as acts of intellect.

The foregoing analysis of the abstraction was intended to point out the genesis of the universal in Ockham's epistemology, and to bring to consciousness the revolutionary shift which was performed by his transplanting the universal from the realm of ontology to that of psychology and logic. When he put down the following simple sentence, "the second act (following that of the intuition) *produces* the universals and the second intentions and *does not presuppose them*",[48] he was writing a new chapter in the annals of history. Again, when he unhesitatingly announced that if both our intuitions and abstractions, sensations and concepts, are mental signs, "we know only propositions, and any science, real or rational, deals exclusively with propositions as such",[49] he initiated a new period in the history of philosophy.

So far we have been dealing with our side of the mind-world relationship in itself and in its psychological aspects. The second part of this essay will concentrate on the other side of this rela-

[46] *In Sent.* I, dist. 35, qu. 5, G.
[47] *In Sent.* I, dist. 2, qu. 8, F.
[48] *In Sent.* II, qu. 25, O.
[49] *In Sent.* I, dist. 2, qu. 4, M.

tionship, that is, it will deal with the possibilities of connecting the world with the mind. In other words, it remains to be seen how the validity of knowledge can be established on the basis of Ockham's nominalistic epistemology.

Ockham accepts as a basic fact, to begin with, that the substratum of all knowledge is furnished to us from an extramental world by means of natural causation. Our sensations and intuitions are effects produced in our sensitive faculty by singular objects in the external world which act as causes. We are, to use his word, "moved" by externally originated sensory influences, whereby we begin to know the objects of the world.[50] Science, however, does not deal with concrete data exclusively. In Ockham's words: "Since all our knowledge derives from the senses, every science too originates from individual objects, although no doctrine should treat of singular things. Properly speaking, there is no science of individuals but of universals standing for individuals."[51] It is the realm of universals, then, which has to be examined carefully as to whether it is a public receiving-station recording actual messages coming from the extramental world, or a mere private laboratory manipulating with mere subjective elements in isolation.

Having eliminated the universal from the ontological world, Ockham had to face the task of saving the valid and objective character of conceptual knowledge. He has cut the ropes which were connecting the boat of the mind to solid grounds. Now he has to prove that the signals which he installed were safe enough means of maintaining contact with the shore. He was quite confident that he could find his orientation with mental signs and their signification just as well as the realists did with their own theory of copy and adequation.

The dangerous character of his doctrine of universals lies in the fact that he explicitly compares them with mental fictions (*fictum, figmentum*). The universal as such has no psychological being in his theory. It is supported by the vehicle of an act of intellect, yet, as such, as an universal, "it is only a logical entity in the soul and is a sort of fiction having the same sort of existence in the logical realm as the external thing has in the psychological

[50] *In Sent.* I, dist. 2, qu. 7, F. [51] *Expos. aur.* Praedicab. De specie.

realm . . . so that their being is their being understood".[52] Such a purely logical product has an unmistakable similarity with mere mental inventions.

Nothing would be more regrettable for Ockham than to see his theory sinking in the morass of subjectivity. The following passage shows his concern very clearly: "The universal is not such a fiction as has nothing similar corresponding to it in the extramental world. It is not a figment like a chimera or something of that sort. That thing can be called a universal which is a likeness (*exemplar*) related without any difference to all external single things and which because of that similitude in the logical being can stand for the external things."[53]

The two apparently realistic expressions which occur here, *exemplar* and *similitudo*, may be taken for the fact that Ockham was willing to adopt the very words of his adversaries rather than give up the objective validity of his universals. On closer investigation, however, it is evident that his meaning is very different from that of the realistic similitude between the *species sensibilis* or *intelligibilis* and the external object. According to his opinion, knowledge based on the similarity of the object and its representation is impossible. To quote him: "Nothing can be represented unless the thing to be represented is known previously."[54] Knowledge based on similarity would postulate *a priori* elements in the mind. The following brings this out very clearly.

> When the knowledge of a similarity produces the knowledge of that to which it bears a resemblance, to know the fact of similarity is not a sufficient cause for the intellect, but it is necessary to have a habitual knowledge of that to which it bears a resemblance. Therefore, if somebody saw the statue of Hercules, without knowing anything about Hercules, he would not by that think rather of Hercules than of Achilles, unless he knew Hercules first and there remained in him the habitual knowledge of Hercules.[55]

This realization of the impossibility of an *a priori* knowledge brings him to the conclusion that knowledge based on similarity between object and representation is altogether impossible.

What is, then, that similitude in the logical realm, on the basis

[52] *In Sent.* I, dist. 2, qu. 8, F.
[53] *In Sent.* I, dist. 2, qu. 8, F. and E.
[54] *In Sent.* II, qu. 15, T: "Nihil potest per aliud representari nisi representatum fuerit prius notum."
[55] *In Sent. Prol.* qu. 9, L.

of which the universal can stand for external things and can be predicated of them? It cannot be the external similitude of the accidents of things as we find it in the doctrine of Abelard and the moderate realists in general. We do not know anything directly about those accidents. The representations we have from them do not show their characters adequately. Ockham even goes so far as to say that "the thing is not more present to the mind by the act of intellect than Caesar is present to somebody by a picture".[56] True to his Augustinian preoccupations he states that the purely intelligible facts such as acts of intellect, acts of will, pleasure, sorrow, and the like, which one can experience as internal, are known to us with greater certainty than the things which fall under the senses. "Anybody could doubt the sensuous experiences", he quotes St. Augustine, "but not such experiences as these: I know I am living; I know I want to be happy; and I know that I do not want to err."[57]

In what, then, lies this important notion of similarity? After what we know about his views on the superiority of inner experiences, we shall find it quite consistent when he says that it lies *in the similarity of experience.* Repeated impressions of stones, for instance, produce in us a reiteration of the original experience when we touched stone for the first time. Because of the similarity of these impressions and on the basis of such repeated and resembling experiences the intellect molds them into an *exemplar,* a logical *fictum,* into a meaning, quite in the sense of the *Bedeutungen* of Husserl;[58] and this logical focus of accumulated similar experiences is the universal which functions for all stones,[59] signifies them, and stands or supposits for them in logical propositions. The similarity, then, upon which he founds his universal concept is a functional similarity of resembling cognitive processes or experiences.

The road to this notion of the universal was prepared for Ockham in Aristotle's account of how universals originate. "Out of

[56] *In Sent.* I, dist. 27, qu. 3, X: "Res non plus capit esse per hoc quod intelligitur quam Cesar per hoc quod pingitur, nec plus est presens intellectui per intellectionem proprie loquendo et de virtute sermonis quam Cesar est presens alicui per picturam."
[57] *In Sent.* Prol. qu. 1, K. K. [58] *Überweg,* Grundriss II, 577.
[59] *Quodlib.* I, qu. 14.

sense-perception", says the Philosopher, "comes to be what we call memory, and out of frequently repeated memories of the same thing develops experince; for a number of memories constitute a single experience. From experience again originate the skill of the craftsman and the knowledge of the man of science."[60] Ockham literally includes these words of the *Posterior Analytics* in his *Expositio aurea* by saying: "Every science starts from individuals. From sensation, which gives only singular things, arises memory, from memory experimentation, and through experimentation we get a universal which is the basis of art and science."[61] These quotations give new clues to the often repeated statement that Aristotelian empiricism is an introduction to nominalism.

How now does the logical meaning of accumulated experiences connect with the external world? This is explained by the following words of Ockham: "I understand by experience because I see the image of the stone. The certainty of understanding the stone, however, comes by reasoning *from effect to cause.*"[62] The repeated similar experiences, recorded in the logical realm, come as effects from the world by way of natural causation. Consequently, the universals which are in the focal point of these effects are veritable Morse signs conveyed by the electric current of natural causation. Ockham's logical realm operates very much like an electromagnetic telegraph-apparatus, where the signals caused by the electric circuit connect us with the encircling world. There is probably no other conception to which Ockham would cling more tenaciously than that of *natural signification.* "It is sufficient", he says, "that the intention be something in the soul, a sign naturally significatory of something for which it can stand."[63] Few expressions occur more often in his writings than that of a natural signification.

At this point it will be appropriate to outline the important distinction between the natural and the conventional universal, which is a decisive factor in solving the problem of Ockham's much discussed nominalism. In his own words:

> The universal is twofold: natural and conventional. The first is a natural sign predicable of many things, as smoke naturally signifies

[60] *Analytica Posteriora* II 19, 100a3-8.
[61] *Expositio aurea.* Praedicab. De Specie. in Prantl, *op. cit.* III 332, Anm. 750.
[62] *Quodlib.* I, qu. 14. [63] *Summa tot. log.* I, 12, f. 6, r. B.

> fire and a groan the pain of the sick man and laughter a certain interior joy. The conventional universal is one by voluntary institution. Such is the spoken word which is an actual quality, numerically one, and universal because of its being a voluntarily instituted sign for the signification of many things.[64]

Lothar Kugler, in his chapter *"Ist Ockham Nominalist?"*,[65] discusses the complications of the problem whether Ockham is a conceptualist or a nominalist and speaks of a conceptualistic-nominalism and of a nominalistic-conceptualism with great precision. My own position in this controvery is the following. By the very elusive name of nominalism I understand the view that regards concepts or terms as mere *subjective representations* for externally existing individual things. The words nominalism or terminism may be used interchangeably with the understanding that terminism emphasizes more the logico-propositional character of concepts. Concepts or terms are formulated in linguistic symbols; the natural universal is clothed in the conventional universal. The more the vocalistic, grammatical element is emphasized, and the more universals are considered as common designations and collective names, the stricter, the more verbalistic, is the nominalistic view. On the other hand, an emphasis put on the concept or intention of the soul considered as a universal mother-tongue, results in what we call conceptualism, which is a mitigated form of nominalism.

What is Ockham's position in terms of these formulations? He sometimes implies the possibility of conceptual thinking without words, sometimes seems to hold the view that concepts and words are inseparable. He distinguishes spoken, written, and conceived propositions and says that "as we know the spoken proposition, we know just as truly the mental proposition which has no language".[66] There is no doubt about the fact that the universal for him is basically a meaning, that is, a concept signifying naturally the members belonging under it. Nevertheless he sometimes extends the name 'universal' to the words designating these concepts. The reason that he gives is that whatever is signified by the concept is signified concomitantly by the word as well and *vice versa*.[67]

[64] *In Sent.* II, qu. 25, P.
[65] Lothar Kugler, *Der Begriff der Erkenntnis bei Wilhelm von Ockham* (Breslau, 1913) 28-43.
[66] *In Sent.* I, dist. 2, qu. 4, M.
[67] *Expos. aurea,* Praedicab. Prooem.

Yet he is anxious to add always that the word signifies by institution,[68] while the concept signifies by nature. Words are contrivances; concepts are natural products.[69] The close of his discussions is always in favor of the natural or conceptual universal: "Of a universal that is such by discretion, I do not speak, but I do speak of that one which has whatever is universal in it by its very nature."[70]

To sum up, Ockham stresses the grammatical and verbal element enough to be called a genuine nominalist. At the same time, the center of gravity of his theory of universals lies decidedly in the concept, which classifies him as a conceptualist. To combine both views we may call him a nominalist of the vocalistic-conceptualist type.

The nominalism of Ockham, however, will not be set in its proper light until we see it as a terministic nominalism. John Gerson (1363-1429), characterizing the scholastic polemics of his time, names the two opposing parties "formalistae" and "terministae".[71] By designating the followers of Ockham as terminists he gives us a good hint, for it is in the direction of terminism that we may find the most fruitful approach to the distinctive character of Ockham's epistemology.

Prantl was undoubtedly hitting the nail on the head when he summed up his laborious investigations concerning the "Parteistellung" of Ockham in this sentence: "Die principielle Unterordnung der Universalienfrage unter den byzantinischen[72] Begriff terminus ist die besondere Eigentümlichkeit der Ansicht Occam's."[73] We are familiar with the notion of terminus as being identical with any significatory intention, yet considered in a proposition as subject or predicate. Why has this notion such central significance in Ockham's epistemology? The reason will

[68] *Summa tot. log.* I, 14, f. 6, v. B: "As the word is called common, the same also may be called universal, adding that this is not by the nature of the thing but only by the agreement of users."

[69] In *Quodlib.* IV. qu. 19 we read: "Et ista intentio secunda significat ita *naturaliter* intentiones primas et potest pro eis supponere in propositione, sicut intentio prima significat naturaliter res extra et potest pro eis supponere: "These words prove clearly how wrong Windelband is when in his *A History of Philosophy* (New York, The MacMillan Co. 1923, 343) he calls the "second intentions" arbitrary.

[70] *Summa tot. log.* I, 22, f. 9, v. A.

[71] Prantl, *loc. cit.* IV 146, Anm. 607, 613.

[72] Prantl's famous theory of the "Byzantine logic", of course, has been completely abandoned since the refutations of R. Stapper, Ch. Thurot, and Valentine Rose.

[73] Prantl, *loc. cit.* III 344.

be quickly found if we remember that the essence of the universal lies in the notion of predicability, that is, in the logical property of belonging to its *inferiora* by predication, by *dici de multis*. Precisely because a universal signifies many individuals and can be predicated of them, we call it a universal. Direct signification, as when a first intention refers to a class, does not give a universal. We need the reflecting act of predication to obtain the second intention or the universal. Predication, however, cannot occur except in a logical proposition. Consequently, the signifying intentions, in order to become universals, have to function as terms, that is, as parts of a proposition. An intention of the soul, while it stands outside of a proposition, signifies. When the same intention stands in a proposition, it becomes a term, and it supposits. Because of the fact that the essence of the universal lies in its predicability, the intention has to function as a terminus in a proposition in order to become a universal. For that reason, second intentions are never really mere intentions but always terms as well.[74] Any intention, in order to become a universal, has to be shifted from the psychological realm, from the realm of mere signification, into the logical or propositional realm, into the realm of supposition. This is the meaning of Prantl's statement subsuming Ockham's total doctrine of universals under the heading of the terminus.

These discussions bring us back to our preliminary statement that the whole epistemology and logic of Ockham centers around the two conceptions borrowed from speculative grammar: signification and supposition. The former is more an epistemological, the latter a strictly logical conception. Let us clarify Ockham's meaning concerning the latter.

He defines supposition in the following manner: "By supposition we mean the acceptance of terms for something else so that in a proposition we employ the term for that something."[75] Expressed in a more modern way: in Überweg's *Grundriss*: "Die Supposition ist die Representation dessen, was im Umfange eines Begriffes liegt, durch das diesen Begriff bezeichnende Wort."[76] From the

[74] *In Sent.* I, dist. 23, qu. 1, D.
[75] *Summa tot. log.* I, 63, f. 20, v. B: "Dicitur autem suppositio, *i.e.*, pro aliis positio, ita quod, quando terminus in propositione stat pro aliquo, utimur illo termino pro illo."
[76] Friedrich Überweg, *Grundriss* II 578.

definition of Ockham it is clear that "the supposition is a property of the term yet never except in a proposition".[77] *Supponere* is used by Ockham and in general by the scholastics in an intransitive sense, meaning to supposit, to substitute, to stand for, to represent vicariously. The supposition is threefold: personal, simple, and material. In a personal supposition we accept the terms of a proposition because they are signs of some really existing object.[78] For instance, in the proposition 'man is a rational animal', the term 'man' stands for its signified objects, the individual men, and we accept and employ its supposition. In a material supposition there is no signification but we accept the term for a word or a written symbol. For instance, in the proposition, '*man* is a name', the term *man* supposits, stands for the word, and we accept and employ its substitution.[79] The third type or simple supposition is historically of great significance because of its relation to the clash of realistic and nominalistic points of view. Petrus Hispanus the realist differentiates the personal and simple supposition in the following manner: "The personal supposition is the acceptance of a general term for its *inferiora*. The simple supposition is the acceptance of a term *for the universal thing* signified by the term itself."[80] Now Ockham could not use this definition because he eliminated the *res universalis* from the ontological realm. The simple supposition had to be re-interpreted according to his epistemological criticism. The new, nominalistic definition was formulated this way: "The simple supposition is that in which the term stands for the intention of the soul but not in a significative way."[81] The universal word, then, stands for nothing ontological, but for psychological intentions. Signification, of course, is excluded in a simple supposition, for nothing can be a sign for itself. Ockham uses the following instance for a simple supposition: 'Man is a species'; in this proposition the term 'man' stands for its own concept and we accept and employ this substitution for the concept.

[77] *Summa tot. log.* I, 63, f. 20, v. B.

[78] *Summa tot. log.* C. 64, f. 21, r. A: "The personal supposition generally means that a term stands for its signified object, whether it be a thing outside of the soul or a word or an intention of the soul or something written or any other imaginable thing. Whenever the subject or predicate of a proposition stands for its signified object, we have a case of personal supposition."

[79] *Summa tot. log.* C. 64, f. 21, r. A: "The material supposition is that in which the term does not function in a significative way, but stands either for the word or for a written sign."

[80] *Summulae logicales,* VII. in Prantl, *loc. cit.* III 51, Anm. 203-04.

[81] *Summa tot. log.* C. 64, f. 21, r. A.

This new definition of Ockham, although not exactly a "facteur dissolvant de la synthèse scolastique", as Michalski puts it,[82] may surely be called a symbol of the antagonism which was carried on between the *via antiqua*, the *reales*, and the *via moderna*, the *nominales*, during the ensuing two hundred years.

A comparison of Ockham's notion of signification with his notion of supposition makes it clear that the former has a wider extent than the latter. Only the personal supposition is based on signification, while simple and material suppositions are without any signification at all. The material supposition is restricted to grammar. The simple supposition is used in rational science or logic only. It is the personal supposition, based on signification, and standing for external individual objects, that interests us most in our investigation of how Ockham establishes the validity of knowledge.

Because the object of knowledge is to be found in universal propositions based on individuals, and the essence of any universal was discovered in its predicability or capability to supposit for others, it is evident that Ockham's only way of building a bridge to the extramental world was to use the important property of his terms: supposition. It is because both the first and second intentions can supposit for individual objects that we can claim validity for our knowledge. The fact that the immediate subject-matter of any science is a proposition does not disturb the *Venerabilis Inceptor*. He knows that "although we speak of the thing, yet we speak of it by the intermediacy of propositions and terms".[83] He is well aware that in rational science these terms stand and supposit for each other only. Yet he is firmly convinced that in real science propositions and terms stand and supposit for things.[84] This property of our terms is a sufficient guarantee for Ockham that our knowledge is not a mere subjective construction but can be validated in the objective world also. "It is irrelevant", he says, "for real science, whether the terms of the known proposition are things outside of the soul or only in the soul, taking it for granted all along that they substitute and stand for the things themselves."[85] To express his idea in a different way, we may say that it is irrelevant for the spectroscopist whether the Frauenhofer lines are

[82] K. Michalski, *Les courants philosophiques à Oxford et à Paris pendant le XIV-ème siècle* 67.
[83] *In Sent.* I, dist. 2, qu. 11, P.
[84] *In Sent.* I, dist. 2, qu. 4, C. N.
[85] *In Sent.* I, dist. 2, qu. 4, N.

actually in the sun or are in the spectrum where we analyse them, taking it for granted all along that the spectral lines stand for solar and sidereal chemical elements. Frauenhofer's tomb bears the inscription, *Approximavit sidera*; and we may apply the same word to Ockham, who did his best under the circumstances, and at least approximated to reality by using his theory of supposition.

How Ockham uses supposition to establish the validity of knowledge can be best seen in his theory of truth. For a singular proposition to be true materially, it is not necessary that the predicate should actually, *a parte rei,* inhere in the subject, but it is enough if subject and predicate supposit, stand for, the same thing.[86] The case is the same with general propositions. In order to be true, the subject and predicate of a general proposition do not have to be one and the same actually in the order of things. It is enough if the predicate supposits, that is, stands for, all that the subject stands for.[87]

To sum up, we have been investigating Ockham's theory of knowledge and its inseparable logical implications in two respects. We have been concentrating first on the mind-world relationship in its *psychological aspects* dealing with intentional signs. Our result was that psychologically the mind and the world are related to each other by the causal nexus of natural *signification.* In the second section, we have discussed the *logical aspects* of the mind-world relationship and have found that in Ockham's theory the validity of knowledge can be established logically by means of *supposition.*

These two properties of the terms, signification and supposition, indicate the remarkable bifurcation which we notice in Ockham's nominalistic philosophy. On one side, we are confronted with the most outspoken *empiricism,* on the other, with a logical *formalism.*

The first trend develops from the idea of signification. Reality is pluralistic and individual. Its causal influences result in mental signs, that is, in concrete first intentions which signify their sources of origin.[88] The universal in its psychological being is an act of intellect which naturally signifies the particular objects belonging to it. There is no other universal or common nature in things. Essence and existence coincide.[89] There is no need for any prin-

[86] *Summa tot. log.* I, 2, c. 2. [87] *Summa tot. log.* I, 2, c. 4.
[88] *Quodlib.* IV, qu. 19.
[89] *Quodlib.* II, qu. 7: "Existence and essence signify simply one and the same thing."

ciple of individuation, because there is no common essence to be individualized.[90] Reality in its inmost being is concrete and individual. We formulate and systematize this reality in the real sciences, consisting of propositions, the terms of which stand, by means of personal supposition, for concrete individuals on the basis of natural signification.

The second trend develops along the idea of supposition. Because of the elimination of the ontological universal, terms of the second intention such as *species, genus, differentia,* etc., do not signify anything in the external world. Such terms in propositions can supposit and stand only for their own intentions, that is, admit of only simple supposition. Terms employed in simple supposition were thus cut off from the external world and had to develop in isolation. Their function was restricted to the working out of rules that establish relations between conceptions. The *scientia rationalis,* or logic, with the exclusive use of the *suppositio simplex,* turned into a strictly formalistic *scientia sermocinalis,* which by an exclusive cultivation of the rules of formal relations left any other problem to the metaphysician.[91]

Another important bifurcation was created by Ockham's epistemological dualism between the external world and its representation in the mind. With his theory of signs, he inserted a medium between the knowing mind and the knowable world in such a way that what had been for ages a means of knowledge, became with him the immediate object of knowledge. The setting of the problem of knowledge in this manner became of immeasurable importance for the coming centuries. Ockham's nominalistic formulations, so rich in their implications, contained the seeds of the entire problem of knowledge which was to dominate later centuries of European philosophy.

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[90] *In Sent.* I, dist. 2, qu. 6, P: "Quaelibet res singularis seipsa est singularis . . . ergo quicquid est singulare per nihil additum: est singulare seipso."

[91] *In Sent.* I, dist. 23, qu. 1, D: "Whether the second intentions are really and psychologically or only logically in the soul, has no reference to the problem and is not for the logician to determine. The logician's principal task is to consider the distinction between the names of the first and second intentions. What the logician precisely is expected to say is that, in this proposition 'man is a species', the subject stands for a common something and not for something which it signifies. Whether that common something is real or not real is not his but the metaphysician's business."

NECESSARY AND CONTINGENT TRUTHS

THE problem which I propose to discuss in this paper concerns the logical relation holding between necessary and contingent truths. It is usually taken for granted, I believe, that "whatever follows necessarily from a necessary truth is itself necessary":[1]

$$(p, q) : \sim\Diamond\sim p . p < q . < . \sim\Diamond\sim q .$$

This principle seems so certain as hardly to be open to doubt; and no one, in recent times at least, has to my knowledge explicitly questioned it. Professor Lewis, however, although he nowhere seems to question it explicitly, holds a theory in connection with his conception of strict implication which, it appears to me, contradicts this principle. His view is to the effect that every case of strict implication strictly implies a case of material implication:

$$(p, q) : p < q . < . p \supset q$$

or, what is the same thing

$$(p, q) : \sim\Diamond\sim(p \supset q) . < . p \supset q .$$

It is to be supposed, in regard to this dictum, that the strict implication holding between p and q constitutes in effect a necessary connection between them; and it is also to be supposed, in the same regard, that the material implication holding between p and q is in effect a contingent, or extrinsic, connection between them—so that a value satisfying $p < q$ would be a necessary truth, while a value satisfying $p \supset q$ would, in so far as it satisfied $p \supset q$ *merely*, be a contingent truth. It would be the case, of course, if Professor Lewis's theory were correct, that a value which satisfied $p \supset q$ and also satisfied $p < q$ would be a necessary truth; but it is clear, at any rate, that a value which satisfied $p \supset q$ and did not also satisfy $p < q$ would be a contingent truth.

It should be noticed, in this connection, that material implication is to be taken in the sense *defined* in *Principia Mathematica*, as $\sim pvq$ or as $\sim(p . \sim q)$, and not as it is *used* there for the purpose of accomplishing logical deductions. For it is quite

[1] F. P. Ramsey, *Foundations of Mathematics* 155.

commonly agreed now, I think, that Russell and Whitehead use, at a logical minimum, strict implication, although they nowhere recognize the fact of this usage in their informal exposition. The reason why we must say that they do use, at a logical minimum, strict implication in their purely formal exposition (at least in the first five numbers of the so-called formal *Principia*) is that they are concerned with the deduction of a system of tautologies. That there is a discrepancy between their definition and their use of implication, and further that although they define the implication which they are to use in their formal exposition of logic as being material implication, they in point of logical fact use at the very least the kind of implication defined by Professor Lewis, can easily be seen from the following consideration.

The inconsistency of p with $\sim q$, such that the conjunction $p.\sim q$ results in an impossibility, entails, according to Professor Lewis, that p strictly implies q. And in case there is no inconsistency (in the strict sense of inconsistency or incompatibility) between p and $\sim q$, so that $p.\sim q$, although false, is not impossible, strict implication is not entailed. In other words, if a complex of the logical form $\sim pvq$ can be so negated that the result of the negation is not an impossibility, it is *at most* a case of genuine material implication, as defined in *Principia Mathematica*. Some propositions having the logical form $\sim pvq$, however, are plainly not susceptible to significant negation, in that the results of negating them are in each case a logical impossibility; these are logical formulations which are species of the general form $\sim pvq$, derivable from it by substitution. They are tautologies and have no significant contradictories.

Consider, then, any strictly logical proposition of *Principia* in which implication occurs as an item for the purpose of *logically* relating a premise to a consequence. It will be a tautology, and some specification or other of the general form of a tautology, $\sim pvp$, for example, $p.\supset.pvq$. If it can be significantly negated, so that its negative is strictly conceivable or constitutes a genuine *synthesis* of concepts, the implication involved will be genuinely material, and the *use* and *definition* of implication in *Principia* will exactly coincide. Otherwise, if

its negative is non-significant (which would be tantamount to its having no associated negative at all), significant negation will in no significant or intelligible sense function with respect to it—the conception of significant negation entailing that the result of negating a complex be equally significant with what originally is negated. It is easily seen that the negative of $p . \supset . pvq$, which is $p : \sim(pvq)$, is intrinsically inconsistent, for $p : \sim(pvq)$ is not merely not true, if it is at all significant to assert of it that it is *not* true, but is such that it *could not* logically be true, $\sim\Diamond(p : \sim(pvq))$; and therefore, if implication is involved between p and pvq, the kind of implication involved is, at the very least, strict implication. That is to say, from the fact that p is inconsistent with $\sim(pvq)$ it follows, according to Professor Lewis, that p strictly implies pvq. And although the implication defined by him may not be a sufficient condition for the kind of implication required for the deduction of tautologies, it would seem that it is, at a logical minimum, a necessary condition for the required kind of implication.[2] It may of course be the case, and if Professor Lewis's theory is correct it will be, that material implication is a necessary condition for the possibility of logical deduction; but it is clear that material implication is not a sufficient condition for it, and therefore that by itself material implication is not the kind of implication actually used.

There is nothing strange or startling, then, in the fact that the system of strict implication strictly implies the system of so-called (or rather mis-called) material implication, because both, as a matter of analytic fact, are to be considered systems of strict implication. What is strange and startling, it seems to me, is that a case of strict implication should strictly imply a case of genuine material implication or that the system of strict implication should strictly imply a system (if there were such a system) of genuine material implication. And that this is the case is, I believe, what Professor Lewis wishes to maintain, if not as an intrinsic item of his system, at least as an addendum to it.

Material implication in its defined sense deals, as its name indicates, with what, supposedly, *is* the case, such that in regard

[2] E. J. Nelson, "Intensional Relations", *Mind*, October 1930.

to any case of material implication which *is* the case the contradictory of it is entirely conceivable as a state of affairs. It has to do with extrinsic syntheses of concepts, and hence a case of material implication is, with regard to its truth-status, contingent upon circumstances external to it; so that its truth-status does not affect its significance-status. For this reason it can be false significantly. Consider any proposition of the logical form $p \supset q$, *e.g.*, 'I have a toothache ⊃ Homer was blind'. It will have four possible truth-specifications, each of which when assigned to it results in a logically possible proposition, and from the truth of at least one of which it will follow that the original proposition is false. Let p = 'I have a toothache' and q = 'Homer was blind'; then we have the array of its truth-possibilities, in terms of the Boolean expansion,

$$p.q.v.\sim p.q.v.\sim p.\sim q.v.p.\sim q,$$

or, to use the matrix formulation,

p	q	$p \supset q$	
T	T	T	◇
F	T	T	◇
F	F	T	◇
T	F	F	◇∼

That is to say, a genuine case of material implication is not true for all the possible truth-value combinations of its argument; its truth-value is *truth* for some and *falsehood* for the remainder, though the assignment of each truth-value combination to its arguments results in each case in a significant proposition. It thus does not *exhaust*, or *cover*, its truth-possibilities, and therefore is such that it can be significant and also false. It is for this reason that contingent propositions are said to have associated contradictories.

With regard to any truth of the form $p < q$, however, there are no conceivable or possible truth-value combinations of p and q from the truth of which it would follow that the proposition was false; and any truth-value combination of the arguments of $p < q$ from the truth of which it would *seem* to follow that $p < q$ was false would simply be no genuine or significant

truth-value combination at all; it would merely be nonsense.[3] For whatever is necessarily true *exhausts* or *covers* all the possible truth-value combinations of its arguments, and so is necessarily true for each of them. And an instance of strict implication constitutes a conceptual complex the factors or constituents of which are necessarily connected, so that the denial or negation of the relation connecting the factors of the complex results in conceptual unintelligibility. For instance, the concept 'being colored' entails the concept 'being extended', so that 'being colored and not extended' constitutes no actual synthesis of concepts and nothing which could be apprehended as a *unitary* complex.[4] Thus '$(x).x$ is colored $\supset x$ is extended' is a necessary truth,

(1) $\sim\Diamond\sim(x).x$ is colored $\supset x$ is extended,

or

$(x).x$ is colored $< x$ is extended;

and '$(\exists x).x$ is colored $.\sim(x$ is extended$)$' is an impossibility,

(2) $\sim\Diamond(\exists x).x$ is colored $.\sim(x$ is extended$)$.

Of course (1) and (2) are strictly equivalent, and it is easy to see that the negative of either (1) or (2), which would have the force of asserting the truth or at least the significance of the contradictory of either (1) or (2), results in conceptual non-significance. It results in

$\Diamond(\exists x).x$ is colored $.x$ is not extended,

which is to the effect that there *could be* something which is both colored and not-extended, and which purports therefore to present a conceivable or possible state of affairs in contradistinction to an analytic fact of impossibility, a fact to the effect that no such state of affairs is possible.

And so, if an instance of material implication were to follow strictly from any instance of strict implication, it would be the case that at least some necessary truths strictly, or necessarily, implied some contingent truths:

$$(\exists p, q):\sim\Diamond\sim p.p<q.<.q.$$

[3] See L. Wittgenstein, *Proc. Arist. Soc.*, Supp. Vol. IX, 162–71, especially on this point, 170.

[4] Lewis and Langford, *Symbolic Logic*, 475.

And this, it seems to me, contradicts the logical dictum that *only* necessary truths follow necessarily from necessary truths, *i.e.*, it contradicts

$$(p, q) : \sim\Diamond\sim p . p < q . < . \sim\Diamond\sim q .$$

In the remainder of this paper I shall limit myself to a discussion of the following two closely connected statements: (1) Some necessary truths strictly imply some contingent truths, (2) Every case of strict implication strictly implies a case of material implication:

(1) $$(\exists p, q) : \sim\Diamond\sim p . p < q . < . q$$

(2) $$(p, q) : p < q . < . p \supset q .$$

I shall consider the narrower case (2) first.

There are several points in connection with propositions of the form $\sim\Diamond\sim p$ and $\sim\Diamond p$ to which I wish first to call attention. In their book, *Symbolic Logic*, Professors Lewis and Langford write (163, 274) that necessarily true propositions are necessarily also *true*, where by 'being true' is meant, I take it, 'being true as a matter of empirical fact'; for otherwise the statement would be to the effect that necessarily true propositions are necessarily also necessarily true, which would hardly be worthy of special notice. And I take it that they do mean the former, and not merely the latter, because of the logical notation they employ in expressing this: they state

(*a*) $$(p) . \sim\Diamond\sim p < p$$

as well as

(*b*) $$(p) . \sim\Diamond p < \sim p,$$

which, as usually translated, are to the effect that (*a*) every necessary truth is necessarily a truth, in the above sense of 'being true', and (*b*) every impossibility is necessarily a falsehood, where by 'being false', if different in meaning from 'being necessarily false' or impossible, is meant 'being false as a matter of empirical fact'. These points are doubtful and will be discussed later, but for the present they need not be questioned. What I wish to bring out explicitly in regard to them here is that from the fact that p is necessarily true it strictly follows that 'p is false' is not a possibility, and from the fact that p is

impossible it strictly follows that 'p is true' is not a possibility; so that $\sim\Diamond\sim p$ rules out 'p is false' *as a possibility* and $\sim\Diamond p$ rules out 'p is true' *as a possibility*. This is plainly the case, for $\sim\Diamond\sim p$ *means* '$\sim p$ is impossible', *i.e.*, $\sim\Diamond\sim p = \sim\Diamond(\sim p)$, and $\sim\Diamond p$ *means* 'p is true is impossible', *i.e.*, $\sim\Diamond p = \sim\Diamond(p)$. Thus on their view $\sim\Diamond\sim p$ strictly implies p and eliminates $\sim p$ as a possible alternative to p, since it eliminates it as a possibility altogether; and $\sim\Diamond p$ strictly implies $\sim p$ and eliminates p as a possible alternative to $\sim p$, for exactly the same reason. And hence, even though $\sim\Diamond\sim p < p$ might be taken to be entirely significant, $\sim\Diamond\sim p . < . p v \sim p$ must be considered nonsignificant. For $p v \sim p$ is to the effect that p is (necessarily) either true or false; and, plainly, if it is impossible to assert significantly that p is false, it must be nonsense to assert that p is either true or *false*. That is to say, if $p v \sim p$ is a genuine *disjunction* to the effect that p is (necessarily) either true or false, such that it must be one, and only one, and could logically *be either*, it must involve the possibility of p's being false, as well as the possibility of p's being true. And, of course, in connection with $\sim\Diamond\sim p$, $p v \sim p$ is not a significant disjunction, since it ostensibly involves $\sim p$ as a possibility in contradistinction to the fact entailed by $\sim\Diamond\sim p$ to the effect that $\sim p$ is impossible. Thus if we had $\sim\Diamond\sim p < p$ we should also have $\sim\Diamond\sim p . < . \sim\Diamond\sim p$, from which it can easily be seen that if $\sim\Diamond\sim p$ implied $p v \sim p$ also, we should have the nonsensical implication

$$\sim\Diamond\sim p . < : p v \sim p : \sim\Diamond\sim p .$$

which involves the fictitious possibility $\Diamond\sim p . \sim\Diamond\sim p$. For the same reason, $\sim\Diamond p . < . p v \sim p$ cannot be considered significant, even though we should consider $\sim\Diamond p < \sim p$ significant.

These points can be clearly exhibited in connection with the specific formulation under consideration, namely $(p, q) : p < q . < . p \supset q$. Let us take the following formulations:

$$\begin{aligned}
&(p, q) : p < q . < . p \supset q && . < : \\
&(p) : p < p . < . p \supset p && . < : \\
&(p) . p < p . < . (p) . p \supset p && : = : \\
&\sim\Diamond\sim [\sim\Diamond\sim (p .) . p \supset p . \supset . (p .) . p \supset p] && : = : \\
&\sim\Diamond\sim [\Diamond\sim (p .) . p \supset p . v . (p .) . p \supset p] .
\end{aligned}$$

The last of these is strictly equivalent to each of the following two:

I $\sim\Diamond[\sim\Diamond\sim(p.).p\supset p:\sim(p).p\supset p]$,

II $\sim\Diamond[\sim\Diamond(\exists p).p.\sim p:(\exists p).p.\sim p]$

I is to the effect that it is impossible that $(p).p\supset p$ be both necessarily true and also false as a matter of empirical fact; II is to the effect that it is impossible for $(\exists p).p.\sim p$ to be impossible and also true as a matter of empirical fact. In regard to I, therefore, it is impossible that $(p).p\supset p$ be both necessarily true and either true or false:

I′ $\sim\Diamond[\sim\Diamond\sim(p).p\supset p:.(p).p\supset p.v.\sim(p).p\supset p]$;

and in regard to II it is impossible that $(\exists p).p.\sim p$ be both impossible and either false or true:

II′ $\sim\Diamond[\sim\Diamond(\exists p).p.\sim p:.\sim(\exists p).p.\sim p.v.(\exists p).p.\sim p$,

although, as was previously allowed, it may be the case that the expressions

$$\sim\Diamond\sim(p).p\supset p:(p).p\supset p$$

and $$\sim\Diamond(\exists p).p.\sim p:\sim(\exists p).p.\sim p$$

are significant. It is seen, thus, that in connection with

(α) $$\sim\Diamond\sim(p).p\supset p$$

the expression

$$(p).p\supset p.v.\sim(p).p\supset p$$

is non-significant; and in connection with

(β) $$\sim\Diamond(\exists p).p.\sim p$$

the expression

$$\sim(\exists p).p.\sim p.v.(\exists p).p.\sim p$$

is non-significant.

Note, now, the propositions purported to be strictly implied by (α) and (β), namely:

(α') $$(p).p\supset p$$

(β') $$\sim(\exists p).p.\sim p.$$

(α'), considered by itself, is notationally a material truth, with regard to which, it is to be supposed, the property of being materially true, or of being true as a matter of empirical fact, is a contingent property, such that a proposition possessing the

property could conceivably not possess it, or be false. Hence *by itself* (α') would be a contingent truth; and in regard to its being a contingent truth, or in regard to its being a proposition the truth-value of which is contingent upon the status of reality (which is tantamount to its being such that an inspection of it alone will not disclose its truth-value but will disclose only the fact that its truth-value could logically be either truth or falsehood), the fact that its truth-value *is* truth eliminates, necessarily, falsehood from being its *actual* truth-value, but does not rule it out from being one of its logically *possible* truth-values. That is, from the fact that $(p).p \supset p$ is true it strictly follows that $(\exists p).p.\sim p$ is false, but it does not follow that $(\exists p)p.\sim p$ is impossible; for if $(p).p \supset p$ is a *genuine* materially implicative proposition, it entails, as has been seen, $\Diamond(\exists p).\sim(p \supset p)$. With respect to the fact of its being a contingent truth, therefore, whatever else it may also be, it necessarily has an associated contradictory, which is perfectly significant and which it implies in disjunction with itself, *viz.*, $(p):p. <.pv\sim p$, derived by substituting $\sim p$ for q in the *Principia* proposition $(p, q):p. <.pvq$; (α') strictly implies (α''), $(p).p \supset p.v.\sim(p).p \supset p$.

We have now the following set of propositions:

(α) $\sim\Diamond\sim(p).p \supset p$ $.<:$

(α') $(p).p \supset p$ $.<:$

(α'') $(p).p \supset p.v.\sim(p).p \supset p.$

From this set it follows, plainly, that (α) strictly implies (α''):

I'' $\sim\Diamond\sim(p).p \supset p. <:(p).p \supset p.v.\sim(p).p \supset p.$

This consequence, I'', prescribes a set of (supposed) possibilities of which the following is a member, as is easily ascertained by expanding I'' into a disjunction:

I''' $\sim\Diamond\sim(p).p \supset p:.(p).p \supset p.v.\sim(p).p \supset p.$

And although I'' does not strictly imply I''', just as $p<q$ involves $p.q$ but does not strictly imply it, I'' *does* strictly imply

I'''' $\Diamond[\sim\Diamond\sim(p).p \supset p:.(p).p \supset p.v.\sim(p).p \supset p]$,

just as $p<q$ does strictly imply $\Diamond(p.q)$. But I'''' is the proper contradictory of I', that is, of

$$\sim\Diamond[\sim\Diamond\sim(p).p \supset p:.(p).p \supset p.v.\sim(p).p \supset p],$$

which is a consequence of I, and therefore a consequence of $(p, q) : p < q . < . p \supset q$. Hence Professor Lewis's postulate contradicts its own consequence, and is self-contradictory.

Precisely the same argument holds with regard to II.

It is easy to see now, more specifically, the reason why Professor Lewis's postulate is non-significant: the fact that (α) strictly implies (α'), if there were such a fact, would strictly imply

$$\sim\Diamond\sim(p) . p \supset p . < . \Diamond\sim(p) . p \supset p,$$

since (α'), if distinct from (α), as being a contingent truth, would strictly imply $\Diamond\sim(p) . p \supset p$; and the fact, if there were such a fact, that (β) strictly implies (β'), would strictly imply

$$\sim\Diamond(\exists p) . p . \sim p . < . \Diamond(\exists p) . p . \sim p,$$

since (β'), if distinct from (β), as being a contingent falsehood, would strictly imply $\Diamond(\exists p) . p . \sim p$.

And in general, it is plain that a case of genuine material implication is such that it could as a matter of logical conceivability or possibility be false, though it is in point of fact true. It is true for *some only* of the possible truth-value combinations of its arguments, but it is logically significant for *all* of them. In the following tables S = significant and $\sim$S = non-significant:

(1)

p	q	$\vdash p \supset q$		$\vdash \Diamond(p . \sim q)$
T	T	T	S	S
F	T	T	S	S
F	F	T	S	S
T	F	F	S	S

The truth-range of an instance of material implication is narrower than its range of significance, and thus it possesses the property of 'being significant for all the possible truth-value combinations of its arguments'. A case of strict implication, however, *is true for all the possible truth-value combinations for which it is significant;* its range of truth coincides with its range of significance. This must be so if an actual case of $p < q$ is to be an *a priori* truth, for *a priori* truths are precisely those which are true whenever they are significant—compare $p \vee \sim p$, which does not admit of false interpretations. Logical necessities are not *axioms* which can be given false values. For this reason a value

of $p<q$ is significant for some combinations only, and non-significant for the remaining combinations:

	p	q	$\vdash p<q$	$\vdash\Diamond(p.\sim q)$[5]
	T	T	T, S	$\sim$S
(2)	F	T	T, S	$\sim$S
	F	F	T, S	$\sim$S
	T	F	$\sim$S	S

A case of strict implication, then, possesses the property of 'being significant for some, and only some (not all), of the truth-value combinations of its arguments'. Hence, if a case of strict implication were to imply strictly a case of material implication, or if $(p, q):p<q.<.p\supset q$ were true, or, more accurately, were a valid logical principle, it would follow that the entailing of the property 'being true for some only (not all) of the truth-value combinations of its arguments' necessitated the entailing of the property 'being true for *all* the truth-value combinations of its arguments'. And these are plainly inconsistent properties. This can be seen immediately from the following matrix formulation of Professor Lewis's postulate, which is a combination of the preceding two matrices:

p	q	$\vdash p<q$	$.<.$	$\vdash p\supset q$
T	T	S		S
F	T	S		S
F	F	S		S
T	F	$\sim$S		S

From the combination of matrices (1) and (2) we get as a further consequence the nonsensical matrix

p	q	$\vdash\Diamond(p.\sim q)$
T	T	S, $\sim$S
F	T	S, $\sim$S
F	F	S, $\sim$S
T	F	S, S

It remains now to discuss the more general formulation (2), to the effect that some necessary truths imply contingent truths:

[5] *I.e.*, if the expressions $p<q$ and $\Diamond(p.\sim q)$ are significant they each designate analytic facts—one a fact of necessary connection, the other a fact of possibility; and therefore, providing p and q have the same values in both expressions, if one expression designates a fact, it is significant, while the other expression could not designate a fact and would have to be non-significant. For there cannot be mutually contradictory *facts* in the domain of the *a priori*, or, for that matter, in any domain.

(2) $$(\exists p,q):\sim\Diamond\sim p:p<q.<.q.$$

In this connection, I shall first discuss two points mentioned previously, namely, (*a*) what is necessarily true is necessarily also *true*, and (*b*) what is impossible is necessarily also *false:*

(*a*) $$(p).\sim\Diamond\sim p<p$$

(*b*) $$(p).\sim\Diamond p<\sim p,$$

where by 'being true' is meant 'being true as a matter of empirical fact', such that with regard to *this* property a proposition possessing it is a *contingent* truth, and where by 'being false' is meant 'being false as a matter of empirical fact', such that with regard to *this* property a proposition possessing it is a contingent falsehood.

These statements, (*a*) and (*b*), taken together are equivalent to the statement that the class consisting of necessary truths and impossibilities is a sub-class of the class of contingent propositions. And this latter statement is, I think, obviously impossible. It is clear, I think, that *any* proposition which is true, or which is a contingent truth, *whatever else it may also happen to be*, is such that, with respect to its property 'being true', it could logically be false. And if it does not possess the property 'being such that it could logically be false', it is no sense a contingent truth, nor possesses the property 'being true'. That is, with respect to the property 'being true', which if different from the property 'being necessarily true' can only be taken to be a contingent property, susceptible to significant negation, a proposition possessing it *must* itself be contingent and *must* for this reason possess the property 'being such that it could logically be false': $(p).p<\Diamond\sim p$. Now, if $(p).\sim\Diamond\sim p<p$ were a logically valid proposition, we should have the consequence $(p).\sim\Diamond\sim p<\Diamond\sim p$, which is nonsense. From this it is easy to see that no proposition which is necessarily true can also be true, in any ordinary sense of the word true, because otherwise it would have to possess the property 'being such that it *could* logically be false', which is inconsistent with the one it *does* possess, namely the property 'being such that it *could not* logically be false'. The same argument precisely holds with regard to the pair of properties 'being false' and 'being impossible'.

Thus neither statement, $(p).\sim\Diamond\sim p<p$ nor $(p).\sim\Diamond p<\sim p$, is significant.

It becomes clear now that a contingent proposition is such that its truth-value is extrinsic to it, and so is susceptible to significant negation. The negation of the particular truth-value it does as a matter of fact have should not therefore result in an impossibility, but should result in an equally significant and contingent proposition, which itself possesses the property 'being such that it could logically be false'. And in case a proposition is such that its property of being true (or being false) cannot be so negated, the property is not extrinsic to nor a contingent truth-value of it; and consequently such a proposition can in no significant sense be thought of as contingent. Necessary propositions, whether strictly logical or not, are analytic facts, the truth, or, more accurately, the factuality, of which is certifiable on logical grounds, *a priori*; therefore their factuality is never transcendent to them nor a contingent property of them. The reason for regarding (*a*) and (*b*) as logically correct is due, it seems to me, to confusing two entirely distinct ideas, each of which unfortunately is often denominated by the same word, 'true'. The confusion consists in using this word to designate the two separate ideas: truth as extrinsic to a proposition, in the sense of a property the possession of which is contingent upon matters of empirical fact; and truth as intrinsic to a proposition, in the sense of a property the possession of which is a matter of *a priori* fact. And it need hardly be mentioned that it would be conducive to greater clarity and accuracy, and obviate a good deal of confusion, if for the latter use of the word 'true' some other designation were substituted. The traditional logic used 'valid', which meant presumably that an expression said to be valid represented a logical fact rather than anything which could be said to be 'true'. At any rate, it is clear that the two concepts are distinct and that no entailing of the above kind exists between them.

To revert now to the general formulation (2), that some necessary truths strictly imply contingent truths:

$$(\exists p,q).\sim\Diamond\sim p.p<q.<.q.$$

Any necessary proposition of the logical form $p<q$ (*e.g.*, 'There

is a mountain strictly implies there is a valley'), such that neither of its propositional constituents, p, q, by itself is a necessary proposition, entails the *possibility* of q's being false. This is evidenced by the fact that such a proposition entails $\sim p.\sim q$ as a possibility, although of course q cannot be false in conjunction with p's being true; so that we have $p<q.<.\Diamond\sim q$. With regard to expression (2), however the case is somewhat different; for here q alone is a contingent truth, the proposition implying it being a necessity. And the reason I have stressed the points in connection with (*a*) and (*b*), at the risk of being tedious, is that I wanted to have it clearly understood, in regard to (2), that q is not strictly implied by p in respect of p's being a contingent truth, which itself is the consequence of a necessity, $\sim\Diamond\sim p$; in this expression q must be taken as a contingent truth which is strictly implied by a necessary proposition, and is not implied by it via the intermediary of a contingent truth directly entailed by $\sim\Diamond\sim p$.

Let us then consider the matrix upon which (2) is constructed,

(2′) $$\sim\Diamond\sim p.p<q.<.q,$$

with a view to determining whether q *can* take contingent values. If it cannot take contingent truths as values, q will obviously not be a contingent function, and (2) will be logically non-significant, for the reason that it will be constructed upon a non-significant matrix. The implicans of (2′) is a conjunction of the expressions

c_1 $$\sim\Diamond\sim p$$

c_2 $$p<q$$

which, with regard to the fact of their combination into a single conjunctive premise, impose logical restrictions upon each other. *By itself* c_2 is strictly equivalent to the following set of conjunctions taken together in a single necessary disjunctive complex,

$$p.q,\ \sim p.\sim q,\ \sim p.q.$$

Each of these must be a possibility and one and only one of them must be the case if $p<q$ is the case:

$$p<q.=.\sim\Diamond\sim(p.q.v.\sim p.\sim q.v.\sim p.q);$$

so that *by itself* c_2 entails $\Diamond\sim q$, and therefore logically allows q to take contingent values, *i.e.*, $p<q.<.q$ is significant. Of this

set of disjuncts, however, it is plain that $c_1, \sim\Diamond\sim p$, if combined with c_2 into a conjunctive premise, would eliminate both $\sim p . \sim q$ and $\sim p . q$ as being *not* possible, since they each contradict a part of the implicans, namely $\sim\Diamond\sim p$. This leaves, with regard to the conjunction of premises $\sim\Diamond\sim p : p < q$, $p . q$ as the *only* possibility of a necessary disjunction, which of course entails that *both* p and q be necessarily true, $\sim\Diamond\sim(p . q)$. Here q cannot take contingent values, and consequently (2) must be considered a logically non-significant expression, as being constructed upon a non-significant matrix. It follows, moreover, that the logical dictum "*if a proposition is of such a nature that it can be known a priori, all its consequences are of that kind*",[6] or, what is precisely the same thing, "whatever follows necessarily from a necessary truth is itself necessary", is a logically valid principle:

$$(p,q) : \sim\Diamond\sim p . p < q . < . \sim\Diamond\sim q.$$

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[6] C. H. Langford, "Propositions Directly About Particulars", *Mind*, April 1929, p. 221

THE PROBLEM OF THE CATEGORIES

AMONG the persistent problems of historic thought, there are some whose legitimate formulation is necessarily hinged on the tradition that presents them; a new judgment must issue from an old interpretation. A traditional doctrine often becomes, in this manner, a dramatic theme for the exposé of charlatanism in one's predecessors. But on closer inspection, it is seen that frequently the very passion for dogma which becomes the cause of fresh complaint is itself the essential vice of the doctrine that aims at rectification. Unfortunately, such problems, significant as they are, in time are relegated to pure dialectic and accordingly lose what little usefulness they ever possessed. This I take to be a characteristic phase of the problem of the categories.

Tradition normally assigns categorial discussion to logic. The Aristotelian "Organon", the Kantian "Transscendentale Analytik", and the Hegelian "Logik", chronologically represent the matrices of the three great classical doctrines, and exhibit the almost unqualified predilection of the masters for the nomenclature of logic in categorial investigation. In the majority of cases the delicacy of the problem has been fully appreciated. By Kant's own admission, it is one of the most disconcerting in all metaphysics. It embraces virtually all of Hegel's dialectic efforts. It is reasonably authentic that it called for Aristotle's first serious speculation. And Renouvier, whose tabulation is one of the most imposing of recent attempts at a restatement of the problem and a reconstruction of the solution, is said to have remarked toward the end of his life: "The problem of the categories is the most arduous one which can present itself to a philosopher. It is the key to everything. I have studied it, so to speak, all my life; yet I have not studied it sufficiently." Indeed, its answer may serve as a port of entry to any system of philosophy. Yet, despite its extreme delicacy and precarious status, there has emerged, from the traditional discussion, an overwhelming number of Procrustean patterns—no two alike—which are as rigorous as they are canonical. If we may pluralize James's characterization of Bradley's Absolute, we might term the foregoing doctrines a series of 'metaphysical monsters'—each with many heads. It would almost seem as if the structure of reality,

and more particularly of thought, is, from the speculative side, doomed to an uncompromising orthodoxy, in view of the finality that is invariably pronounced on each doctrine, as regards both its exhaustiveness and its necessity. Moreover, the majority of the classical credendae have laid claim to a discovery of *the* principle whereby the categories may be determined. But in each case it has been a different lawgiver.

Call the kaleidoscopic array what you will: the "manifold of phenomena"; the "chaotic throng"; the "meaningless impressions"; the "jumble of facts"; the "buzzing, blooming confusion". It is certain that *some* manner of reduction can be imposed thereon, whether it be summa genera, types of order, kinds of structure, *Grundbegriffe*, type-forms, moments, forms of the understanding, or whatever. Contrariwise, if we begin with the one, whether it be the all-inclusive self, or the notion of being, it is equally certain that this oneness will yield some manner of manyness, regardless of how deep this production may go. Such reflection involves no presupposition, and it is just this which has been the chief philosophic *motive* toward categorial investigation. Naturally, I do not mean that it has been the pursuit of an intelligible order. Such an order is, of necessity, implicitly contained in the presentations of sense before reflection can begin. It is rather the pursuit of a classificatory order, predicated directly on the data of experience, and either discovered therein or imposed thereon.

Many categorical issues are fought, as a matter of fact, on an actually neutral ground. Take for example the question whether the categories are logical and conceptual, or ontological and structural. The correspondence of the two is usually spoken of as validity; their combination as reality. Such a question can manifestly be answered only by reference to a given epistemological position or metaphysical hypothesis which will account for their *status*. Such an issue as this is, however, ultimate without being critical. A *doctrine* must face this problem before it has said the last word. Strictly speaking, for Kant, the categories belonged to the *valid* world; valid in so far as the presentations of sense not only do, but must correspond to them, as determinations. The ultimately *real* for Kant remained an unknown, whether you choose to call it the thing-in-itself, and be certain of its reality; or

the noumenon, and be uncertain thereof. For Aristotle and Hegel, on the other hand, the categories were indisputable possessions of the real world. Their premises were *not* panlogistic; *not* panontologistic; *not* panactivistic; but simply real. Their aim was not to stress the element of presentation, of concept, or of activity. They simply accepted an identity which they did not question. Such an issue is ultimate, I repeat, but not critical. The categories belong both to 'my thinking' and to 'that which I think'. The question is: To which first do they belong? And my answer is that as instruments of thought they belong primarily to the mind which forges them and secondarily to the presentations of experience which make them possible, yet without the former limiting the latter. *Experience* is the primary determinant. Mind *qualifies* this determination. To be valid, they must *fit* objects in general; then they are instruments. To be significant, they must meet also the demands of the interested mind; they must be specific and suggestive; then they are *useful* instruments.

If I may use a familiar expression of James's, our "theories thus become instruments, not answers to enigmas, in which we can rest". And the point I should like to make is this: a pragmatic interpretation of the categories would not only rescue the problem from the sphere of dialectic but would forge an instrument whose service would be felt in both matters of fact and matters of value. Pragmatism will then no longer be "the attitude of looking away from first things, principles, categories, supposed necessities; and of looking towards last things, fruits, consequences, facts"; the categories will be the fruits and consequences themselves. The truth of any particular doctrine will accordingly become "the name of whatever proves itself to be good in the way of belief, and good, too, for definite, assignable reasons". It will not be rooted in fixed categories which are *a priori*. Such a position, however, neither affirms nor denies the existence of *a priori* kinds of structure in reality. Reposing on Kant, I say this is a noumenal matter. We neither know, nor have any prospect of knowing, either the *a priori* existence, or the *a priori* character, of such a generic structure. To carry the speculation beyond the presentations of sense, in their relation to mind, is, I repeat, to become involved in dialectical antinomies. Nor does this mean that metaphysical cate-

gories are impossible. So long as they are pragmatic, they *are* possible, in ontology, in cosmology, and in epistemology, as well as in logic, psychology, physical science, ethics, etc. Indeed, doctrines might, after this fashion, be classified according as they pertain to matters of fact or to matters of value; and further classified according to the practical interpretation which they place on the objects of knowledge. In consequence, many patterns will emerge, quite different, yet quite the same in that each will embrace all the data of experience. The distinctions, as Royce would say, would consist in this: that each predicamental plan would have a "meaning for our purpose". There would be no *a priori* paradigm. The only requisite would be a strict accord with the valid modes of reasoning. Briefly, it would amount to this: that the truths of experience must always be relative to our chosen conceptual systems in terms of which they are expressed; and that amongst such conceptual systems there may be choice in applications. Such choice will be determined, consciously or unconsciously, on pragmatic grounds. New facts may cause a shifting of such grounds. When this happens, nothing literally becomes false, and nothing becomes true which was not always true. An old intellectual instrument has been given up. Old concepts lapse, and new ones take their place. If, by scientific research, new light is thrown on the old scheme of experience, and new categorical interpretations consequently arise, such as Cassirer's "junctional dependency of magnitudes", such discoveries will neither invalidate the old order, nor be rejected as false because new, but will be accepted as fresh intuitions of old presentations.

Suppose we start from the one—the *summum genus*. It has often been urged that there is a certain logical and indubitable self-evidence to the simple statement: 'Something, *qua* pure being, is.' Take, for example, McTaggart's defence of Hegel's point of departure, the category of pure being. To deny this self-evidence, he argues, is to deny equally the self-evidence of the assertion: 'Something is.' And to *doubt* the assertion is as conclusive in its favor as to deny it. For the doubt must be either genuine or not genuine. If it is the former, then we do not question that we question; at all events we hold that our doubt *is*. And if it is the latter, we admit the truth of 'Something is', and only feign doubt.

Most modern logicians are, however, I believe, inclined to argue just contrariwise. Gibson, for example, attempts a denial of the self-evident character of Pure Being by asserting his doubt "in a much less abstract sense". It is not logically inconsistent, he points out, to deny that 'Something *qua* pure being is', since the assertion of the denial is the assertion not that 'Something is' *qua* pure being, but that 'Something is' for any particular individual an immediate experience. For in the two propositions, 'Pure Being is' and 'My denial of the Existence of Pure Being is', the word 'is' has two quite different meanings.

I do not hold this dispute to much account for our purposes. I am willing to recognize that the ultimate *summum genus* would be as barren as it is comprehensive; that it would not be self-defining; that it would, of necessity, be subject to a dialectical passage of the Hegelian or some other type, in order to take on concrete significance; and that it could not be defined *per genus et differentiam*. But the dispute over its legitimate self-evidence, is, I believe, futile; depending, as it does, on the significance which is attached to the copula.

There arises, however, in connection with this, a problem which is very definitely to the point. Strictly speaking, it involves a Predicable rather than a Predicamental relation; but I take the liberty of bringing it to bear in view of the modern tendency to obscure the original distinction between first and second intentions. Aristotle himself pointed out that the *summum genus* is indefinable. In a sense, now, this is suicidal, for it undermines the entire classification-system developed on the *genus-et-differentia* principle. For such a system makes the meaning of every class-term rest ultimately upon the *summum genus*. And if the *summum genus* is indefinable, it must forever remain a "something, I know not what". Figuratively, it would have the status of a thing-in-itself, and our whole scheme of definitions would be illusory. Symbolically expressed, if Xn be the summum genus, and Xn—1 be a penultimate concept, we mean that Xn—1 equals Xn qualified by d_n; and by the same token, Xn—2 would be Xn—1 qualified by d_{n-1}. Each subaltern concept would thus inherit, by geometric progression, the vices of its superordinates; and so it would continue to the *infima species*. Categories and concepts would thus

not only lose their explanatory powers; they would be positively devoid of meaning.

There is a sense, though, in which the *summum genus* is definable and significant. The key is *meaning*. But there is a dualism to meaning; it requires both a subject and an object. Accordingly, there must be an idealistic counterpart of 'pure being'. But 'Knowable Being' is presuppositious; it requires mere being, known or unknown, as the basic concept. And unknown being would, as we have seen, be meaningless. Therefore, *knowable being* must be the *summum genus*. Modern logic usually lodges this meaning in what it terms 'logical interest'. My point is that this logical interest is essentially pragmatic, and that there will be as many conceptual patterns, as many categorial schemes, as there are meanings with which you wish to endow your fundamental concept. A concept is a concept-in-relation-to-logical-interest. If the addendum be torn away, the concept itself vanishes. Hence the appeal from the concept *per se* to the concept as known is simply the demand to have made explicit what is already implied. But to bring out implications is precisely to do that which renders superfluous all unintelligible assistance from a *deus ex machinâ*. Such conceptions were Renouvier's Relations and Hegel's *Begriff*, contained implicitly in the unknowable and pure *Sein*, which, had they not betrayed their own 'notness', would have remained forever indeterminate.

This subject-object relation brings us face to face with the very heart of the epistemological problem as stated by Kant: What are the conditions of a possible object of experience? Such a problem I am not prepared, nor shall I try, to answer. Its difficulties I have tried to indicate elsewhere. But its pertinence to the categorical problem is only slight. Indeed, one assumes the burden of solving it only when one chooses to develop his own doctrine of the categories. I am at one with Aristotle and Porphyry that there are as many ultimate genera as there are categories. There is no one table that will serve for all metaphysical systems. Each tabulation must, from the standpoint of its own doctrine, assume ultimately the status of a *pium desiderium*. And every sub-category that is derived from the *summa predicamentalia* must involve a *circulus in definiendo* whose intelligibility is

lodged in the pragmatic interest that clusters around the initial unity. To borrow a familiar term, we may call such a classification of the categories diagnostic, to oppose it to a transcendental analysis.

The same holds true if we begin at the other end with a pluralist universe. We are harder put, however. The majority of thinkers have realized this, and it is the exceptional doctrine which takes its departure from the many rather than from the one; for it is easier to explain the parts by the whole than the whole by the parts. Now it is just this difficulty which *demands* a pragmatic interest. In beginning with the one, we saw that it is frequently possible to make it a universal of such high degree that every object of experience could somehow be subsumed under it. But often this leads to a vicious practice: a system is worked, to use James' term, by the word *quatenus*. In beginning with the many, however, no such elasticity or "vicious intellectualism" is possible. To impose a classificatory order on the manifold, such an interest as I have outlined is more than desirable. It is positively indispensable.

Expressed otherwise, the definition of a category must either rest ultimately on some metaphysical hypothesis, from which it derives a definite epistemological status; or it must be so vague as to be indistinguishable from such terms as *summum genus*, class, concept, universal, and type-form. Categories to Kant were necessary conditions, pure forms, *a priori* functions. But so were Space-Time. And it is only after we have finished the Analytic of Concepts that we know what they *are*, differentially; and the Schematism, that we know what they mean. Expressed in terms of Alexander, the impossibility of their definition rests on the necessity of reference to something simpler and more general, which is a manifest paradox. The categories are differential only in so far as they are explanatory, and explanatory only in so far as they are differential. They are bound up with distinctions we make in analysis. Analysis starts *from* a presentation *with* an acceptation. Consequently, as discriminatory characters, the point of departure cannot, in the same sense as its derivatives, be called a category. That is, if categories are to have any explanatory powers at all, the unity of the manifold, existence, being, experi-

ence, etc., cannot be called categories, except in the Hegelian sense of gradation. Then, in a given subject-matter, we discern qualitative differences, the *fundamentum divisionis*; the data taken as a datum and the discovered modes are *not* on the same level, but must be recognized as serially distinct. In short, explanation rests on the categories; the categories on a specific differentiation; the differentiation on an analysis; and the analysis on an interest.

This takes us right to the heart of inference and implication. But rather than agree with Fichte and Schelling that a position implies a negation, I should prefer to regard categorical implication as passing, not from contradictory to contradictory, but from contrary to contrary. It is on a quantitative, not a qualitative, scale that categorical implication must be indicated. Egoism and altruism are verbally recognized as polar opposites. On a pragmatic scale of categorical implication, however, they would simply be on different levels. This is what Nicolai Hartmann means when he speaks of degrees of metaphysical freedom, and when he defines ontological freedom as "the categorical forms of independence of a higher and more complex determination over a lower and less complex one". A derivative category thus becomes a potential meaning actualized through a material implication exerted by the category just above. Each represents an interest which is communicated to its derivatives. A stagnant category means a rusty instrument, which in turn means a deceased interest. A new need is felt. The kaleidoscopic design changes. And we have a new set of categories. Neither set can be said to be better than the other. Each is satisfactory in so far as reality is described accurately, validity is verified completely, and the interest is fulfilled adequately.

There is another leading question which I have not yet analysed: How can constructive categorical research be best directed in the future? I am not sure myself, but I have several suggestions to offer. Leibniz, we recall, did not develop a very detailed doctrine. But if we read his letters, we find that our problem was chronologically the first object of his speculative attention, the one consuming passion of his life and the chief enigma to his otherwise universal genius. His second published work, *De Arte Combinatoria,* deals with a possible problematic interpretation, and

the best way of symbolizing it; and in a letter written two years before his death he deplores the absence of disciples who might carry out his scheme. The project, in brief, was analytic, and founded on a thoroughly scientific arrangement of all the possible objects of human thought. His main objection to Aristotle's predicaments was that they were inadequately explanatory; not that there were too many, but that none reached a profound enough ramification. His next problem, of which we have only a fragmentary account, was the proper mode of expressing these elements. In his *Historia* he refers throughout to "characteristic numbers", which seem to suggest a successive subdivision by letters and numbers. Elsewhere, deploring the artificiality of this method, he suggests geometrically symbolic points and lines; that is, sensible symbols suitable for universal recognition. It is true that he slightly obscured Aristotle's Predicament-Predicable distinction, and was really contemplating a generic rather than a categorical interpretation. But his efforts are strikingly suggestive for our purpose. Leibniz aimed at more than a mere medium of communication. He was, I think, after a new instrument—a "*tertium organon*", which, in general, would aid thought and equalize intellectual achievement, and, in particular, ameliorate the higher functions of judgment and ratiocination. Aristotle's scheme had succeeded in putting to an end such disputes as whether sound were a physical quantity or a qualitative affection. Leibniz contemplated an advance over even this—a "spécieuse générale", whereby, "when controversies arise, there would be no more occasion for disputes between two philosophers than between accountants. It would suffice for them to take pen in hand, to sit down to their tables and to say to each other, let us calculate." And in his "Non inelegans specimen demonstrandi in abstractis", he submits rules, couched in algebraic notation, for gradually building up complex notions. I am not sufficiently familiar with the recent advances of symbolic logic to be able to judge judiciously of Leibniz' suggestions. Yet I believe that research in such a direction would materially aid the explanatory powers of categories, and would, if it is within their power to have mathematical certainty, give them just such an *a priori* and universal character.

Wilkins, a much less imposing figure, but equally suggestive, departs, with Leibniz, from the first book of Aristotle's *Organon*, follows the leadership of Mill, and reposes on a "systematic classification of all the possible objects of apprehension". He expresses his project in a sentence: "The principal design aimed at in these tables is to give a sufficient enumeration of all such things and notions as are to have names assigned to them, and withal so to combine these as to their order that the place of everything may contribute to a description of it." Here we have a purpose which seems to me to combine the cardinal virtues of the historical efforts: the irreducible predicates of Aristotle; the explanatory catalogue of Leibniz; the graded series of Hegel; and the descriptive types formulated by Royce.

These suggestions necessarily involve a contradiction of Aristotle's principle that, properly, the concrete, individual thing falls into no category. A point I should like to make, however, is that the traditional march, particularly since Kant, has ignored this principle, and is coming more and more to associate the function of categories with that of classification in general. I do not base this judgment on the vulgar laxity with which the term is employed today, but on the interpretations which philosophers themselves have placed on the problem—interpretations whose wide divergence I have indicated in the first portion. The modal categories must, consequently, constitute a problem of their own, quite distinct from that of ontology, cosmology, epistemology, logic, ethics, science, etc. And a *definite* and distinct terminology must belong to each sphere—not, of necessity, exclusively, but at least *precisely*. The problem of the categories has particularly suffered the vicious misuse of language. This distressing situation becomes evident when one first encounters the problem, and I suggest that its recognized neglect may be considerably mitigated by a more rigorous accord with terminological distinctions and methodological discoveries.

Such a direction of thought was indicated by Kant in what I consider one of his most suggestive passages: ". . . the categories, as the fundamental concepts of the pure understanding, have also their pure derivative concepts. These could not be passed over in a complete system of transcendental philosophy, but in a merely

critical essay, the mention of the fact may suffice"; and again that "these pure but derivative concepts of the understanding (the predicabilia)" may, "if we are once in possession of the fundamental and primitive concepts", be easily determined, so as "to give us a complete image of the genealogical tree of the pure understanding". "As at present", he goes on, "I am concerned not with the completeness, but only with the principle of a system, I leave this supplementary work for a future occasion." There will thus arise "a merely analytical part of metaphysics, which might precede the second, and would by its precision and completeness be not only useful, but, in virtue of its system, be even to some extent elegant". I agree that such a project of gradational categories would be highly useful.

But I reply that this task is not so easy as it seems, and that it is just this problem, coördinated with the purely categorical one, which must, in the future, undergo a profound analysis. Otherwise the genealogical tree, at best, must be forever devoid of fruit, and remain a permanent possession of uncritical dogma. On Kantian distinctions I should relegate *the* list of *the* categories to Dialectic; but *a* list of categories I should preserve to science, and far from representing the categorical pursuit as illusory, I should find therein one of physical science's most helpful allies. That is, "wherever there is any set of interrelated concepts, there, quite apart from all questions of application or the things we use them of, we have generated a whole complex array of orderly relations or patterns of meaning." These are the handles whereby we take hold of the same data which science uses and by which science, as a means of pragmatic explanation, operates. The categories must precede. But to become useful, their derivatives must follow and the complexity of the array will determine the depth of production which the original and highest genera will reach. In such a manner may we carry on from Kant's major analysis and determine the sub-categories which issue legitimately therefrom.

Who knows what bearing the speculation of the past century will have on our problem? Notice the influence of Caley and Klein on Royce. Or take Minkowski's introduction of the "*Lichtweg*" into our formerly conceived world. A world of physics becomes an

"absolute world". A tri-dimensional *process* becomes a four-dimensional *being*. And time, as a variable magnitude, is replaced by the imaginary ray of light. Take Einstein's interpretation of the causal relation, and his insistence that a physical explanation, to fulfill the epistemological requirements, must restrict itself to observed facts. Take the conception of curved space, as formulated for example by Lobatschevsky, or the counterargument of Poincaré, who, with Kant, points out the impossibility of empirical verification or refutation of mathematical postulates. Indeed, the recent advances of non-Euclidean geometry alone are indicative of the relative character not only of the mathematical structure, but of the ontological structure. As Cassirer puts it, it remains the task of systematic philosophy to free the idea of the world from one-sidedness. It must grasp the *whole system* of symbolic forms, the application of which produces for us the concept of an ordered reality, and by virtue of which subject and object, ego and world, are separated in definite form, so that it may refer each individual in this totality to its fixed place; but fixed *relatively*. Each particular form thus becomes relativized with regard to the others; but since the relativization is throughout reciprocal, and since the whole alone can serve as the symbol of truth and reality, the resultant limit is necessarily immanent, and is removed as soon as reference to the whole takes place. Instead of saying with Descartes, "give us matter and motion, and we will construct the universe", we reverse the request: Give us a world in which there are relations—and we will construct matter and motion, or whatever. The world is not a synthesis of matter and motion. Matter and motion are rather analytic moments of the world.

Moreover, such classifications could enjoy the same rigidity, the same nicety of distinction, and the same empirical necessity, that any of the traditional tabulations have professed. The chief difference would be a consciousness of the limitations of any particular doctrine, and of the possibility of other patterns, equally exact, rigorous, and canonical. The key to each would be lodged in the pragmatic interest that turned it out. Their common Forum would be, in Dewey's language, "the entire human predicament", and "not any special impulse or staked-off section of experience". It is very probable that most of them would share certain common

features, just as there are some elements which seem to have run the entire course of the traditional interpretations. In a metaphysical doctrine, for example, such items as time, place, and relation, would, in one form or another, be practically certain to appear; in a purely modal interpretation, possibility and necessity would be almost unavoidable elements; an ontological classification of "first intentions" would have to establish a precise distinction between mental and physical phenomena, or else support its identity of them; an ethical interest might develop along the good-evil antithesis, etc. The function of philosophy would thus become comparable to that of a "Warden of the Marches" between the various sciences. Correct explanation would depend, in any department, on the employment of appropriate categories, and philosophy would exercise "an insight into the relation of the categories in question and the realm of facts which they describe to other categories and other . . . aspects of reality". As "instruments of thought", they are "forged by one generation and handed on to the next, affecting subsequent thinking". It is often commented that Aristotle's list, for example, is not perfect. My point is that *no* list is perfect; the best it can be is correct. To be this it must (1) embrace *all* the presentations of experience, and (2) accord with the principles of legitimate classification. Its values as a scheme will, from this point on, depend on its conformity to the original purpose. Judged by this standard, a doctrine does not stand or fall according as it has found *the* principle of transcendental deduction. It need discover only *a* principle, so long as that principle conforms to the above requirements. *The* principle is a "something—I know not what".

This seems to me the only possible escape from the dilemma. The categories must be accepted as "living options", and cannot be adequately discussed as "monuments, however imperishable, of a past that has no longer any relation to the present". Lotze has argued this point forcibly. Given a plurality of unknown extent, if it is proposed to resolve it not merely by way of dichotomy into M and non-M, but ultimately into members of a purely positive sort, M, N, O, P, Q, there can be no security in the way of method for the completeness of this disjunctive process. From the nature of the case we must always go on to think of a residuary mem-

ber R, of which nothing is known but that it is different from the preceding members. He who pronounces the completeness of the division is merely saying that for his part he cannot add a fresh member R. Whoever denies the completeness affirms that a further member R has occurred to him which, with equal right, belongs to the series. "Aristotle may have had the most admirable principles of division; but they do not prove that he has noticed all the members which properly fall under them." But the same remark holds equally good against Kant. It may be conceded to him that it is only in the form of the judgment that the acts of thought are performed by means of which we affirm anything of the real. If it is admitted further as a consequence of this that there will be as many different primary propositions of this kind as there are essentially different logical forms of judgment, still the admission that these different forms of judgment have been exhaustively discovered cannot be insisted on as a matter, properly speaking, of methodological necessity. The admission will be made as soon as we feel ourselves satisfied and have nothing to add to the classification; and if this agreement were universal, the matter would be practically settled, for every inventory must be taken as complete, if those who are interested in its completeness can find nothing more to add to it. But that kind of theoretical security for an unconditional completeness, which Kant was in quest of, is something intrinsically impossible. And I trust that this interpretation will not be construed as final scepticism. I have aimed only to follow the path blazed by the sage of Königsberg himself, which leads us away from the traditional dogma toward the outlook of reflection and criticism. The problem of the categories must undergo a Renaissance in the name of intellectual humility! The *problem* more than the solution beckons the philosopher; for *the* principle, whereby *the* categories may be determined, must forever remain a desideratum, awaiting divine illumination, and lodged securely in a far corner of the dialectic, beyond the reach of man.

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DISCUSSION

CLASSICAL AND RELATIONAL LOGIC

THE RISE of relational logic has brought the philosopher many new problems. Not the least of these is that of confronting the relational and the classical logics with one another. There have already been many encounters between the proponents of each. It is the purpose of the present article to discuss but two of the questions usually prominent in these encounters. What is the procedure that each employs, or should employ, in analysing the structure of thought? And what may be the significance of the distinction between the structures which the two logics build as a result of this analysis? It will appear that the answer to the first of these questions leads appropriately to a tentative answer to the second.

The problem of analysing thought with a view to the development of a symbolic representation of its structure is in part linguistic. The modern logician arrives at his symbolism by an inductive procedure in dealing with language. For example, Jørgensen:[1] "In order . . . to find the logical forms we must first seek out examples of logical objects which can have such forms, and then, by analysing these, endeavor mentally to separate form from content. . . . The first concern of the logician, therefore, is to collect, by inductive methods, as much thought-material as possible and arrange and classify this." There is here a weakness characteristic of all inductive procedure, which turns out to be most significant. "It is precisely because the inductive collection and analysis of material can never be regarded as finished that logicians are obliged to be constantly on the lookout for new logical forms. . . . All that we can say is that they must have discovered *certain* forms, and *certain* rules of operation before they can set to work on the deduction; they can never know whether they have discovered *all* forms and *all* rules. And it is one of the chief failings of classical logic that it so soon stagnated in a system regarded as fixed once and for all."[2] It hardly needs to be pointed out that relational logic is subject to the same danger. It has discovered certain forms and rules which, within a period of time, may be as definitely superseded as it (for certain purposes) has superseded the classical.

Language is something which the logician simply must not ignore; it is the most important form of our expression for thought. The less it is regarded the more dangerous it becomes. Apart from the tendency of any logician to translate foreign linguistic forms into the structure of his own tongue, there is another and more significant reason for this. As Jørgensen describes it, ". . . there does not exist any

[1] *Treatise of Formal Logic* (London, Oxford, 1931) III 206.
[2] *Ibid.* 207.

one-one relation between thoughts and their expression in language".[3] Language has never attained logical perfection, largely for the reason that the expression of thought is only one among its several major functions. And these several functions seldom occur separately. "Furthermore, it is possible to express one and the same thought in a variety of ways, while different thoughts can be expressed in like forms."[4] Perhaps the clearest formulation of the relation of language to thought is Jespersen's threefold division of grammar into Form, Function, and Notion. A speaker moves through Notion to Function to Form; and a listener through Form to Function to Notion. This makes clear not only the mediate dependence of Notion upon Form in social intercourse, but also the subversive introduction by grammatical forms of problems which are the delight of the philosopher. The English preterit, the classical copula, the 'I' in 'I imagine an apple' (Jørgensen's "houmculuc seated in the brain"), and substantivized adjectives, are outstanding examples. The forms of language have a strong influence on our conception of reality, and an equally strong influence on our induction of logical forms.

This raises a fundamental problem for the logician. Must we proceed by induction? Is it possible by means of this procedure "to find certain features common to all languages and naturally explained as being the expression of general logical thought forms"?[5] Jørgensen decides unequivocally in favor of induction: "Logicians have . . . to sift the linguistic material, first getting rid of all extra-intellectual elements, and then comparing the various linguistic forms and arranging them according to their thought-content; this last being then analysed in order to arrive at its logical forms. This done, they have further, in order to fix their results, to find suitable symbolic means of expression for the same, and if possible, such as will also serve as the means of a logical calculus . . .".[6]

There is in the mind of the present writer a question as to the adequacy of induction here. Will he who proceeds inductively choose his instances from a sufficiently large field of linguistic variations? Will he consider possible but not necessarily extant languages which might adequately express thought? His inquiry and his procedure are certainly legitimate, but do they suffice? Suppose one is seeking a symbolic expression for the structure of thought *per se*. Induction, being *a posteriori*, might show that no extant language lacked certain characteristics, but it could never show that language must necessarily possess them. A full inquiry into the relation of classical and relational logic demands, in fairness to the former, more than the inductive procedure can offer; for the inductive procedure is the procedure of

[3] *Ibid.* 217.
[4] *Ibid.* 222.
[5] *Ibid.* 232.
[6] *Ibid.* 233.

the relational logician primarily. We hope to make this more clear as we proceed.

What will happen if we attack the problem deductively? Suppose there had been a logician among those North American Indians whose language, being primitive, was made up entirely of substantives; the symbol for 'canoe', let us say, signifying the idea of travel, and the symbol for 'sun' indicating the passage of time. What kind of logical symbolism would he have built? Not having used any of his linguistic elements as predicatives, the only possibility of a ***maximal form*** would be one in which only terms appear. But without predicatives it is difficult to imagine any *logical* classification of linguistic elements; *i.e.*, any classification which would have a significance for the pure structure of thought. For example, if the substantives were classified into animal, vegetable, and mineral, such a classification would not be logical because it would not indicate *thought*-structure. The only possible structure would be an entirely fortuitous one in which substantives appeared side by side. The symbol for 'the speaker' plus those for 'sun' and 'travel' need simply be placed side by side *in any order* to indicate that the speaker was about to take a long journey. This situation would exist only under very primitive conditions, of course; but is nevertheless significant to our discussion. The fortuitous structure would soon give place to an habitual one which later students would call grammatical. But this is the way in which grammar, not logic, arises. Hence it is safe to say that from a language built solely upon substantives there is no possibility of a *logical* symbolism in the sense in which we are using that word. The only contradictions possible would be ones of fact rather than of thought.

On the other hand, is it possible to suppose a language composed entirely of predicatives? Disregarding the argument of the internal relationist which, since it is in the field of metaphysics, is not pertinent to our discussion; the supposition of such a language is at least extremely difficult. Predicatives may be predicatives for elements which may themselves be used as predicatives, but unless we are willing to fall into the abyss of an infinite regression the predicatives must somewhere be predicatives of substantives. Even the most abstract science is at some point based upon substantives. If it were not, a community of meaning would be impossible. Hence we may disregard the possibility of any symbolism being erected upon a language made up entirely of predicatives.

The third, and only remaining, possibility is that of a language made up of both substantives and predicatives. If there is to be a symbolic expression of thought-structure, indeed if there is to be thought-structure itself, there must be at least this differentiation of symbols. It would be as difficult to suppose a language with neither substantives nor predicatives as it would be to suppose one without

predicatives. In other words, the S-P symbolism seems to express something essential to thought-structure. This is not to say that relational logic has committed an error in avoiding the S-P form. It expresses a different structure in the same material. This differentiation between substantive and predicative elements will be recognized as the differentiation established by the classical logician. What is the relation between the structure established by this differentiation and that more complicated structure of the relational logician? If the former is more fundamental as symbolic of thought, what is the place of the latter? If the latter provides a better logical calculus, what is the value of the former?

If there is one thing that relational logic has succeeded in establishing it has been its advantage over the logic of Aristotle in the manipulation of thought as a formal structure. This is not to say that the classical logic is wrong. It is often pointed out that the Aristotelian logic is right as far as it goes. But it does not go far enough for modern purposes. Its limitations are easily pointed out. It must be admitted at the same time that the Aristotelian logic could be so developed as to overcome to a degree these limitations. The Revised Square of Opposition is a step in this direction. The difficulty with such steps is that so complicated a system is evolved that the advantages of the relational logic over it, for the work modern logicians wish to do, become even more obvious than they were. It is analogous to the situation which would arise if we tried to solve problems in arithmetic without the use of the functions of multiplication and division; it could be done, but only at the expense of a much greater amount of labor than would be necessary to one who had the advantages of those two operations. Relational logic has a similar advantage over the Aristotelian. The calculus of propositional forms shows this quite clearly. For example, the syllogism in the form:

$$\vdash :. (x) . \phi x \supset \psi x : (x) . \psi x \supset \theta x : \supset . (x) . \phi x \supset \theta x$$

is more general than any of the Aristotelian forms of it, and permits of more manipulation and more minute study of the relations around propositional forms.

But suppose this advantage of the relational logic over the Aristotelian established. That is not the whole story of the connection between the two. Consider the proposition, 'John wrote a letter to James'. In relational logic this proposition receives as its maximal form, $R(x, y, z,)$. The original proposition might also be expressed as a dyadic relation in which R would include 'wrote a letter' or in which the second term might stand for 'a letter to James'. These two possibilities suggest that the distinction between terms and relations *as such* is not so great as might be imagined. Apparently a term may become part of a relation. But, on the other side, it will be pointed

out to him who argues thus that 'John wrote a letter to James' when expressed as a dyadic relation is not expressed in its maximal form. Certainly $R(x, y, z)$ has the virtue that it cannot be further analysed, in this particular case. But suppose we consider the proposition, 'John wrote hurriedly to James'. Is this dyadic or triadic? Is the whole relation 'wrote hurriedly', or is it simply 'wrote'? In the latter case it is a triadic relation in which an adverb becomes a term; in the former case the maximal form becomes a convenience agreed upon. Now if an adverb can be a term, may not an adjective also? Suppose the proposition were 'John Smith wrote to James'. Is this dyadic or triadic? 'John' and 'Smith' are as much separate elements as 'wrote' and 'hurriedly'. 'Hurriedly' modifies 'wrote', and 'John' modifies 'Smith'. Any other member of the Smith family might have written James, just as whoever did write might have written slowly. In short, it seems difficult to make the finer distinctions between terms and relations and between terms and terms. This suggests that whatever final rule of distinction we do make would seem to be made on the basis of a pragmatic value and not to be determined by the essential nature of thought.

This suggestion is strengthened by a further consideration. Let us turn to another proposition, 'Caesar marches'. Here we have the monadic case, expressed symbolically in relational logic not by the use of a relational variable but by means of a predicational variable, Q. The absence of the relation here would seem to be significant, particularly for the following reason. If we add a second term to the proposition and make it, 'Caesar marches to Brundisium', we have a dyadic relation which may be expressed (though to be sure not in its maximal form) in a propositional form using the predicational variable. In this latter case the Q would include 'to Brundisium' and would become 'marches to Brundisium'. It would seem to be significant that all relations, from the dyadic through the *n*th relation, can be symbolized in this way. This point suggests that there is something preserved in the Aristotelian symbolism which the relational logic fails to express. There is, for example, always the predicative element whether or not it is broken up into elements which allow the use of the relational variable and whether or not the class variable is employed. And there is always the subject of the proposition. The symbolism of the relational logic seems to be a matter of convenience in manipulation. That it is such recommends it, however, for all sciences are systems of convenient symbols.

Is there anything significant to our inquiry in the difference between the results of the deductive and the inductive methods in approaching the problem of thought-structure as exemplified in language? Perhaps the methodological difference is actually definitive of different thought-structures within the same material. Are we approaching a significant statement of the distinction between the Aristotelian and the relational

logics? Perhaps the Qx symbol expresses something which is essential to thought, but not essential (nay, even a hindrance) to the manipulation of thought-structure in the interests of non-contradiction. Suppose, for example, that there were a language in which all thoughts were expressed in monadic propositions. In this language all complicated predicates would have characters of their own. In this language the proposition, 'John gave money to the old man', might be expressed 'John chozel'; 'chozel' signifying 'gave money to the old man'. While such a language may not exist, it would not be more complicated than an ancient Chinese dialect and would be quite adequate to the expression of thought. But a logician brought up on such a mother-tongue and knowing no other could never arrive at the relational logic, for the simple and conclusive reason that his would be a language in which relations were completely absent. But it is also important to note that such a language would not permit the manipulation which would cause the problem of non-contradiction to arise, for the consideration of one proposition as compared with another is itself a problem of relation. Could this man be a logician in any sense?

Apparently we may conclude that there are two structures in thought, if not more. There is first of all the structure necessary to thought as thought, without which thought is impossible. It regards thought not only as actually expressed in extant languages, but also as expressed in any conceivable language. That is the substantive-predicative structure, arrived at deductively. In the second place there is that structure which allows the development of propositional forms, and the class calculus. This latter is most adequately approached by inductive methods. Whether or not this second structure might also be arrived at by deductive methods is an open question; yet it should be noted that the result of Jørgensen's work along empirical lines in classifying propositions into thirteen irreducible forms is of such a character as to make it seem highly improbable that such results could be achieved by deduction. Where, for example, would deduction discover the distinction between the Q-variable and the K-variable? From the point of view of modern logic it would seem that the investigation would have to be empirical; for the problem is to find out just what various grammatical forms signify from a purely structural aspect. It is an attempt, furthermore, to make these significations more explicit by means of a symbolism which has a one-one relation to the thought involved. This is certainly not the province of deduction. Two methods and two structures: neither need offend the other.

The contention between classical and relational logic is, in part at least, caused by an introduction of metaphysical considerations. Jørgensen is himself not innocent of abetting the conflict. He finds that the S-P "view of the nature of a proposition is . . . conspicuously erroneous",[1] arguing from a distinction between concepts (*e.g.*, S and

[1] *Ibid.* 243.

P) and objects. He says: "Propositions therefore do not deal with concepts at all as a rule, but with other objects, groups of objects, phenomena or events." Propositions deal with objects *of thought*, to be sure; but these objects as such are objects as part of the structure of thought *and not objects as distinct from concepts*—for this latter distinction is a metaphysical one. In still another place Jørgensen speaks of the symbolism of modern logic as one by which all thinking "could be reduced to a matter of mere calculation" built up into a system "capable of symbolizing all reality".[8] This is the root of the contention. But no logic symbolizes reality: it symbolizes thought as pure structure. A correct understanding of 'term' and 'relation' as employed by the relational logician makes it quite clear that metaphysics is not concerned. The term is such by virtue of its function in the structure of thought; and the relation is such by virtue of the same structurally significant function. The problem whether or not the term has a metaphysical existence does not enter into the mind of the logician *qua* logician. It may stand for a material object; it may stand for a Platonic Idea; it may stand for an Hegelian Absolute—no difference. The one thing of which the logician may be certain is that it is a definite element in the structure of thought, the recognition of which enables him to symbolize propositional forms and thereby produce a valuable calculus of thought. And so with the relation. It makes not a whit of difference to the relational logician whether or not relations are internal to the mind or external to it. They are part of the formal structure of thought and significant as such, regardless for the moment of whether or not they represent the best symbolism for the element in the form of thought for which they stand. As a matter of fact the relational variable, R, is only one of the possible variables used in the symbolism of this logic. Where there are class variables and predicate variables, especially the latter, it seems awkward to use relational variables to cover the whole.

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PARETO'S SOCIOLOGY[1]

A WRITER on sociology must be conceded great freedom in the choice of his point of view and subject-matter, since this term has a fairly definite connotation but varies in denotation from such matters as social pathology, social welfare-work, and city-planning, to generalized history and studies of the life of primitive peoples in the attempt to trace the origins of modern institutions. Pareto's primary

[8] *Ibid.* 268.

[1] *The Mind and Society*, By VILFREDO PARETO. Edited by ARTHUR LIVINGSTON; English translation by ANDREW BONGIORNO and ARTHUR LIVINGSTON. 4 vols. New York, Harcourt, Brace and Co., 1935.

problem was to analyse the conditions of equilibrium in societies.[2] In the course of this discussion, he makes significant remarks about many other matters, but he had no intention of formulating a psychology, ethics, philosophy of history, or political program, as some of his overzealous disciples have contended,[3] and a proper evaluation must consider this as a sociologic work intended to complete the description of society given in Pareto's economic works, which necessarily treat only a limited part of social behavior.[4] As a treatise on sociology, it is conspicuous for its attempt to remain on the level of pure science, excluding all normative considerations, and it abounds in criticism of other theories of society and history which depart from the logico-experimental method of science. It is the critical rather than the positive portion of the work which, presumably, will be of greater interest to the readers of this *Review*, so that these matters will be given more extended notice than, perhaps, is ordinarily justifiable in the review of a sociologic work.

Pareto's theory is intended only as a first approximation to a theory of social equilibrium, so that it admittedly neglects many important influences of climate, race, economic conditions, *et cetera*. He centers attention on non-logical action since logical (rational or instrumental) behavior is limited in social relations largely to certain phases of economic activity. He holds that social behavior rests on instincts, emotions, and sentiments, and to a certain extent, upon reasonings originating in them. Similar non-logical actions widely scattered in time and place have been observed, and varied explanations have been given for them by the people observed or by the observers. Thus, various rites and formulae are used as means of causing or preventing storms or of preserving or destroying crops, and the explanations are given in terms of propitiation of the gods, influence of devils, occult powers of magicians over nature, and so on, according to the type of culture observed. Fundamental to these rites is the belief that these actions can control meteorological events, although the explanations

[2] As an extreme nominalist, Pareto considered Society, the State, the Mind, and similar abstract terms as "metaphysical entities" which could not be used in scientific analysis. Particular societies, nations, or individuals, *per contra*, he considered observable phenomena. Why the *Trattato di sociologia generale* was given its unfortunate title in the translation is not apparent. Perhaps the editor hoped to avoid the associations of the word "sociology", or perhaps the publishers entertained the vain expectation that such a title would make a ponderous and dull work more alluring.

[3] Some have even given this book a place in intellectual history comparable only to Aristotle's *Categories* or Newton's *Principia*.

[4] Pareto's principal works in book form are *Cours d'économie politique* (Lausanne, 1896-7, 2 vols.); *Les systèmes socialistes* (1901; 2nd ed., Paris: Giard, 1926, 2 vols.); *Manuale di economia politica* (Milan, 1909); translated as *Manuel d'économie politique* (Paris, 1909; 2nd ed., 1927); *Trattato di sociologia generale* (Florence, 1917), translated as *Traité de sociologie générale* (Paris, 1917). For biography and bibliography see G. H. Bousquet, *Vilfredo Pareto, sa vie et son oeuvre* (Paris, 1928).

given in terms of cause and effect are colored by other features of the cultures. By comparing many types of non-logical behavior, Pareto concludes that any one type can be analysed into three parts, the external acts observed, the varying pseudo-logical explanations given ("derivations"), and common constant elements ("residues"). The residues are the preconceptions or beliefs or elemental behavior-patterns which are common to a given class of actions. They correspond to certain instincts and sentiments and are the behavior-patterns through which the more basic factors are manifested.[5] They are not causal categories, though Pareto, after due warning, speaks of them elliptically as though they were. He does not pretend that the residues are the simplest elements into which behavior can be resolved, since it is evident that psychology and physiology can reduce them to other classes. But he was not writing a psychology, although the unhappy choice of the English title may have misled many into believing that such was his purpose. The residues are a mere analytic category, useful in sociological investigation because they represent certain uniformities in the social behavior under scrutiny in the same way as groups of very complex physical factors may be treated as primary units in biology or economics.[6] In this way, Pareto avoided the difficulties inherent in trying to construct sociologic theory on the shifting sands of psychological disputation. It is something of an achievement for a sociologist to realize that his science need not push the sociologic into the psychologic, and subsequently to the biologic sciences except where those sciences are immediately relevant.[7]

The variable elements in non-logical conduct are called "derivations", which consist of pseudo-logical explanations of the non-logical conduct observed. Derivations, however, have little direct influence on social behavior except where they are crystallized into institutional forms

[5] Sections 870, 875.

[6] The residues are a heterogeneous group of basic behavior-patterns resulting from instincts and sentiments. They are divided into six main classes: I. "The instinct for combinations" is an inclination to combine certain things with certain other things, likenesses or opposites, numbers with things, omens and events, *et cetera*. This residue results in scientific as well as non-logical thought, and results frequently in the combinations of other residues and derivations. II. "Persistence of aggregates" of sensations and sentiments, of family, social group, of living and dead, of abstractions and uniformities (ideas, codes, mores). III. "Need for expressing sentiments by external acts" as in rituals. IV. "Residues connected with sociality", which are sentiments of conformity, pity, inferiority, and superiority. V. "Integrity of the individual and his appurtenances", position, honor, notions of defilement, and purifications, "saving face", *et cetera*. VI. The sex residue. The residues are closely related to each other, such as II and III and III and IV, and a given practice or derivation is often the consequent of combinations of residues of different classes. The entire second volume is devoted to description and classification of residues.

[7] Obviously there is always scope for argument about relevancy, but a division of scientific labor seems advantageous.

such as civil law, moral, and theologic systems, or when they serve to strengthen or weaken various residues. Analytically they serve as indicators of the residues present, since the residues generally are not directly observed but are inferred from the conduct or the derivation. Two residues, with their corresponding derivations, are most important for social equilibrium, that is, for the stability and survival of a given set of institutions and culture. Every society consists of numerous social classes struggling against each other for a dominant position,[8] and every society or nation is controlled by one social class, the élite, a term used without any laudatory connotation, with the tacit consent of the others regardless of the governmental structure, be it absolute monarchy, dictatorship, or democratic republic. A given structure can be maintained only by a common belief in its desirability and the occasional use of force to repress inimical elements within and without. Hence where Class II residues (persistence of aggregates) predominate, especially in the élite, where there is strong loyalty to God, King, and Country, force will be more readily used than where these residues are weak. But morals, religion, and force are not enough to maintain a society, since it is subject to continuous change. Extreme rigidity, which is fatal, can be avoided only by processes of adaptation and innovation resulting from Class I residues (instinct for combinations). If the latter are dominant, the society is too volatile and too changing to assure belief in its stability, while individuals of the Class I type are unwilling or unable to use force when it is needed. Hence there is some proportion of the two residues which provides the degrees of stability and innovation which are necessary for a dynamic equilibrium. This proportion in the élite can be secured only by circulation to it from other classes of individuals characterized by the residues needed to restore the proper proportion.

There are two outstanding features of Pareto's methodology, his staunch defense of the logico-experimental method[9] in social science at a time when it was generally attacked, and his reformulation of the empiricist-positivist position so as to free it from certain Comtian preconceptions and implicit normative elements.[10] Social sciences do not differ in purpose from the natural sciences. They try to formulate

[8] According to Pareto, Marx's error consisted in assuming only two social classes sharply defined according to economic status only.

[9] Pareto uses the term to include observation without controlled experiment. The Italian and French terms have a wider connotation than the English "experiment", so that Pareto's logico-experimental method is equivalent to empiricism.

[10] His argument is along the lines indicated in Mill, Jevons (*Principles of Science*, 2 vols., London, 1874), Carl Menger (*Untersuchungen über die Methode der Socialwissenschaften*, Leipzig, 1883), and J. N. Keynes (*Scope and Method of Political Economy*, London, 1891).

The methodological discussion running through Pareto's *Sociology* is more succinctly stated in his *Manuel d'économie politique*, chapters 1, 2.

general propositions, laws, principles, and theories about observed social behavior. Laws in social science are descriptions of data and their functional relationships, no more, no less. Ethical value-judgments have no more place in sociology than in astronomy; nor can any amount of science demonstrate that the observed data are the result of a predetermined order of things. Certainty may be possible in metaphysics, but experimental science[11] yields only probabilities limited by the time and place of the observations, and in the social sciences these probabilities are not of a very high order. This may indeed be a commonplace among logicians, but the doctrines of the Enlightenment and of Comte have not wholly disappeared in the social sciences.

In physical science, hypotheses can generally be tested, or at least contradicted, by crucial experiments; but in the social sciences, observation, feebly aided by statistics, must be the sole reliance. And since every type of social behavior is a complex of many factors, abstraction is essential. Hence, a theory must be centered about a few relations, regarding the others as constant or inappreciable quantities for the particular problem. The selection of analytic factors must in part be arbitrary, so that valid conclusions can be reached only by the method of successive approximations or trial and error. Since laws are merely summary statements of observational relationships, an apparent exception indicates an inadequate formula, and not, as is often asserted by social scientists, that there are exceptions to social but not to natural laws. Such a view rests on a non-empirical conception of law at best, and in practice may be merely an excuse for poor analysis. *Ad hoc* hypotheses may be justifiably introduced only as intermediate steps to more complete formulae. It is extremely difficult to formulate complete laws of social relationships, since the variables are so numerous. Theoretically, the method of simultaneous equations offers a possible solution, but aside from certain phases of pure economics,[12] the difficulty of quantification leaves this a purely heuristic device in applied economics, sociology, and political science, and a perpetual warning against the acceptance of simple conclusions. Hence, problems can be studied, especially in the initial stages, only with the assumption of *caeteris paribus*. There may be errors a-plenty, investigation may stop with conclusions that are in accord with sentiment, the selection of data may be influenced by extra-scientific considerations; but free criticism and conflicting generalizations offer partial correctives. There appears to be no alternative if social science is to be based on fact.

Pareto refused to discuss the epistemological basis of his empiricism, if indeed he recognized that there was any. He would have nothing to do with metaphysics, and even argued that the propositions of pure

[11] Observational science included.
[12] As in Pareto's formulation of the conditions of economic equilibrium.

logic and mathematics were empirical. This would seem to be extreme. The laws of identity and contradiction are not empirical, nor is it apparent that observation without "metaphysics" would yield the infinitesimals which Pareto used so successfully in his economics. Ordinarily, one cannot expect too rigorous a formulation of methodology in a work that is primarily concerned with positive science. But Pareto's claims for his sociology are based on its pure empiricism and his criticisms of other writers are sharp because their discussions were non-empirical, so that the need for more precise statement is indicated, especially since the writers who have opposed the empirical method have based their contentions on arguments, largely metaphysical, which Pareto did not meet. It is not sufficient, however, to rest the case for the logico-experimental method in sociology on the achievements of this method in physical science, for it can readily be asserted that the problems are different and that the use of empirical methods in the social sciences for more than a century has not resulted in comparable accretions to knowledge.

From German romantic and historical social science to the institutional, organismic, and "Geisteswissenschaft" schools of the present day, the assumptions of empiricism have been denied and other methods of investigation proposed. Only brief notice of these schools can be taken here, and no attempt can be made to differentiate their doctrines.[13] Some writers start from Hegelian or other romantic or idealist metaphysics. Objective observation is declared impossible; words have only subjective meanings so that precise definition is impossible; in the realm of nature, mechanical determination may prevail, but in society, the freedom of the will prevents the formulation of laws; the natural sciences are "nomothetic", the "Geisteswissenschaften", "idiographic". Others emphasize the organic unity of society, so that piecemeal analysis which neglects organic interdependence can never arrive at a true understanding, or, since social life is a matter of spirit ("Geist") and man is a part thereof, there are special interpretive methods of "understanding" social phenomena, whereas natural phenomena can merely be explained in causal sequences. There is an easy transition from these postulates to purely subjective and normative studies. Historical data and the "Zeitgeist" can readily be interpreted in the light of an author's sentiments and convictions about the proper organization

[13] For example, see K. Knies, *Die politische Oekonomie vom geschichtlichen Standpunkte* (1853; 2nd ed., Braunschweig, 1883); W. Dilthey, *Einleitung in die Geisteswissenschaften* (1883), *Gesammelte Schriften* (Leipzig, 1922), Vol. I; H. Rickert, *Kulturwissenschaft und Naturwissenschaft* (7th ed., Tübingen, 1926); *idem*, *Die Grenzen der naturwissenschaftlichen Begriffsbildung* (1902; 4th ed., Tübingen, 1930); W. Sombart, *Die drei Nationalökonomien* (Munich, 1930); F. v. Gottl-Ottlilienfeld, *Wirtschaft als Leben* (Jena, 1925); O. Spann, *Gesellschaftslehre* (2nd ed., Leipzig, 1923); *idem*, *Fundament der Volkswirtschaftslehre* (1921); *idem*, *Der wahre Staat* (1921).

of social life. The historical-ethical school were apologists for Prussian *étatisme* and bureaucracy. Solidarism is the sociological doctrine of reformist socialism, as historical materialism is of the Marxian variety. The universalistic economics and sociology of Spann is correlated with the "Ständestaatliche" organization of social life. Sombart's "verstehende" economic sociology is consummated in his recent *Deutscher Sozialismus*.[14]

In part, this opposition to the logico-experimental method arose because of the identification of the analytic methods of the classical school with the program of nineteenth-century liberalism. There is, of course, no necessary relation between scientific method and practical program. Pareto's attempt to state a purely scientific theory of society is a notable achievement partly by its contrast to the anti-scientific attack of many of his contemporaries, partly by its freedom from certain non-empirical elements of the earlier positivist program. Even if it be granted that the empirical method can be justified only by dogmatism or pragmatism, it would seem preferable to the discussion of social phenomena in terms of "Geist", historical process, social evolution, and other phrases which are left undefined or are indefinable, or explanation of phenomena in the light of ethical ideals. It will not be denied that social philosophies and programs are needed, but there seems to be a valid distinction between description of what is and prescription of what ought to be. Pareto tried to keep them distinct.

Pareto's theory of derivations is a masterly attack on the preconceptions of theology, metaphysics, ethics, and social and political theory. He argues that there is an instinctive need for giving reasons for conduct,[15] and since in the realm of sentiment, such explanations cannot be logico-experimental, pseudo-logical constructions or derivations are employed. These may apparently satisfy the rules of the syllogism, but the argument is based on non-empirical or illogical elements, references to the authority of gods, men, and books, or on undefined or indefinable terms which readily permit contrary conclusions to be drawn from them. While two contradictories cannot both be true at the same time and place, a given residue may be present in two contrary derivations, which may not in practice refute one another but may even strengthen each other and the underlying residue. Conflicts arising may be resolved by a new derivation, while the residue is unchanged.[16]

Metaphysical, ethical, and social theories are discussed as derivations, that is, as rationalizations of sentiments. Theology obviously involves

[14] Berlin, 1934. Pareto, who read little or no German, did not discuss these writers specifically, although they represent the most serious attack on the type of theory which he represented. He confined his strictures to the socialist and solidarist schools of France and Italy.

[15] Sections 888, 972-5, 1397 ff.

[16] In the realm of sentiment, the Hegelian logic would seem applicable.

reference to the attributes of a divinity which cannot be determined empirically, and so must rest on sentiment and metaphysics. Metaphysics is largely a discussion of the implications of ambiguous terms which cannot be or at least are not defined empirically, but which are assumed to have operative force in the phenomenal world, such as essence, order, natural law, absolute, right reason, free will, soul, and mind. While some of these terms might be given an exact meaning for scientific purposes, they are used generally in vague senses which arouse favorable emotional responses. Pareto was an extreme nominalist, and admitted as much in his earlier works. By the time he wrote his *Sociology*, he had concluded that all metaphysics was absurd from a scientific standpoint,[17] and that both nominalism and realism asserted relations which were not to be observed or verified in the actual world.

Ethical theory fared no better at his hands. Benthamite utilitarianism cannot reconcile the conflict of individual and social utilities without introducing the contrary postulate of altruism into the egoistic basis of conduct, so that the whole doctrine becomes a verbal quibble.[18] The Kantian categorical imperative cannot be applied in a concrete case, and in any event rests on notions of natural law, instinct, and will, which will not bear analysis.[19] Less notable figures are treated more cavalierly. In the intuitionalist systems of ethics, the rôle of sentiment is obvious; in the others, sentiments of benevolence, altruism, and so on, are rationalized into more complex theories which, however, are internally inconsistent and have no empirical validity. The refutation of any one theory merely leads to the statement of another which rationalizes the same sentiments. Social theories include some quantity of empirical data and inference along with their metaphysics and ethics, but are subject to the same objections. Pareto must not be understood as condemning these sentiments; far from it, since they are useful in maintaining a social system. He does object to the conclusion that these theories are scientific[20] conclusions which are universally applicable. The greatest weakness of this part of his discussion is his indictment of the non-logico-experimental theories in general terms. Valid criticism must consist of demonstration of specific errors, and Pareto, in demolishing these theories, confines his analysis to older works and some of them not the most important. To justify such sweeping conclusions, more detailed analysis of the writings of more recent years would be necessary to make his judgment convincing. In his defence, it must be said that he was concerned with these theories only as incidental to his analysis of the factors determining social

[17] It should be noted in passing that Pareto applied the terms metaphysical and theological indifferently to any non-empirical theory, whether in ethics or social theory.

[18] Secs. 1486-92, 1934-5.

[19] Secs. 1514-1521.

[20] Especially "scientific" (Marxian) socialism.

equilibrium, that they were treated only as specific illustrations of the relation of residues and derivations. The inadequacy of his criticism casts some doubt on the validity of the purely sociologic inferences drawn therefrom.

A scientific work must be judged in terms of the validity of the conclusions drawn from the evidence, and of the adequacy of the evidence, and not from any implications which the conclusions may have for any practical purpose or program. In the current discussion of Pareto, he has been hailed as a prophet of a new social philosophy, as a "bourgeois Marx", or condemned as an advocate of violence,[21] of the maintenance of the economic *status quo*, an enemy of democracy and a fascist,[22] but praise or blame on these scores is entirely irrelevant to his scientific purpose. In the latter part of his book, he certainly did not write in the dispassionate tone appropriate to a scientific work. But while Pareto, as any other social scientist, had his sympathies and antipathies, they do not prove or disprove his theses. It would take a book as large as his own to review and analyse his data and conclusions, and to do so would require the special disciplines of at least the ancient historian, the anthropologist, the political scientist, and the sociologist, as well as the economist. All the present writer can do is to say that, in his judgment, the conclusions drawn follow in the main[23] from the evidence submitted. The most serious question is that the evidence does not always seem adequate. One wonders whether many contrary instances could not be adduced, and whether the factors selected for analysis are the most important. Granting the importance of non-logical conduct and even the great significance of the proper proportion of Class I and Class II residues, there still remains the

[21] While Pareto showed that some use of force was necessary, he also concluded that a society could not be maintained solely by force, which, if too generally applied, is self-destructive. Government by violence is unstable, and presumably Class II residues are weak.

[22] To regard Pareto as a fascist is, to say the least, unhistorical. The main theses of the *Sociology* were stated in *Les systèmes socialistes* (1901), written long before fascism was thought of, and when Mussolini was still a boy. Although Pareto was honored by the fascist government, and many fascists regard him as a theoretical exponent of their system, he was by no means in thorough agreement with their policies. Shortly before his death, he warned them, *inter alia*, against warlike adventures, the suppression of free oral and written discussion, and limitation of academic freedom (Bousquet, *op. cit.*, pp. 193-4).

[23] Specifically, the evidence does not seem adequate to establish the undulatory variation of residues. Since the residues can be inferred only from the derivations, it is difficult to assign numerical values to the intensity of the residues, so that the complex sine curves which Pareto used cannot be regarded as more than hypotheses which the facts neither confirm nor refute. Second, the documentary evidence in some instances is questionable, and the editor has pointed out a number of errors. Third, in the analysis of specific doctrines, too much weight is given to the verbiage in which the doctrines were stated. Few writers, Pareto included, write with sufficient exactness so that all sentences will stand scrutiny.

question whether these are the most important factors in social equilibrium. This issue can be raised not only for Pareto's theory but for any sociologic theory; for as long as quantitative data are not available for the analysis of a situation in which there are evidently many variables present, it seems impossible to determine the relative importance of the factors except by assigning arbitrary weights to them. Any other writer may choose to assign different weights, and this is apparent from the variety of sociologic theories current, many of which assign minor rôles to factors admittedly present which, however, are treated as the most important ones by others. In comparison to the natural sciences, therefore, social theories at present can be regarded only as ingenious hypotheses; and in this state of affairs, the social scientist may easily select his data in the light of his own prejudices. It may even be asserted that Pareto's political theory is an illustration of his own theory of derivations. In his analysis of socialist and pacifist theories, he may have been influenced by his belief that an excess of humanitarian sentiment is self-destructive. There may have been a latent longing for the *stato forte* in his criticism of democratic government. Yet in the year 1935, it is not a novel conclusion to hold that democracy is more appearance than reality. The doctrines of Sorel may well have been a factor in his contention that force must be used on occasion to preserve a society, yet a society without coercion would seem possible only in the utopias of a Godwin, or Kropotkin. Today, even in America, the view that constitutional forms are less important than traditions, attitudes of the governing classes, and non-political conditions in determining the character of politics is not entirely new.

Pareto's sociologic theory is therefore a significant hypothesis which can be tested by further research. Analysis may well show that the asserted relationship between some of the derivations and residues is not correct. To disprove his theory would require the demonstration that all of the purported relations are false, although the demonstration that a large number were false would greatly reduce the probable validity of the whole theory. Pareto admitted the incompleteness of his theory, and further investigation may reclassify the data and assign different weights to the factors in the social situation. That sentiment plays a large rôle in political, ethical, and metaphysical theory is apparent enough. Pareto's analysis of the means by which these sentiments are rationalized into theories claiming universality is a significant contribution to thought. Regardless of what scientific value may be placed upon his sociologic theory, his reformulation of the methodological questions of social science is notable, and the theory of derivations offers a valuable instrument for separating scientific conclusions from disguised sentiment in other writings. And if the logico-

experimental method has no validity in the social sciences, then no intersubjective propositions can be formulated or accepted except on a basis of emotional sympathies—which seems to be the alternative—and social scientists had as well cease their ponderous and learned efforts.

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REVIEWS OF BOOKS

Plato's Theory of Knowledge. By FRANCIS MACDONALD CORNFORD. New York, Harcourt, Brace and Company, 1935. Pp. xiv, 336.

Professor Cornford's "object was to make accessible to students of philosophy who cannot easily read the Greek text, two masterpieces of Plato's later period, concerned with questions that still hold a living interest", namely the *Theaetetus* and the *Sophist*. Towards this end he here gives us a translation of nearly the whole of these two dialogues, omitting one page of the *Theaetetus* because "the reader would find the same difficulty as Theaetetus in following the statement and may prefer a summary to a translation", and omitting twelve pages of the *Sophist* because "the modern reader, familiar with classifications all ultimately derived from the model here set up, might be wearied by a translation". He has "tried to follow Plato's own practice of keeping to the current language of educated conversation". Hence he has not bound himself slavishly to a word-for-word rendering, but, for example, translates *αὐτόματοι* by "like mushrooms" and replaces all exclamatory references to the gods by current English exclamations. Perhaps his procedure has made Plato's language sound slightly more pretentious than it is, if it be true that current educated English is a more pretentious speech than that of the educated citizens of ancient Athens. "The mind through its own instrumentality" is surely a more sophisticated phrase than *ἡ ψυχὴ αὐτὴ δι'αὐτῆς*. In one or two passages the reader may think that Professor Cornford has carried his freedom rather too far: in *Theaetetus* 176C *αἱ δ'ἄλλαι δεινότητές τε δοκοῦσα καὶ σοφίαι ἐν μὲν πολιτικαῖς δυναστείαις γιγνόμεναι φορτικαί, ἐν δ' τέχναις βάναυσοι* becomes "all other forms of seeming power and intelligence in the rulers of society are as mean and vulgar as the mechanic's skill in handicraft"; in *Theaetetus* 209E *ἡ μὲν σκυτάλης ἡ ὑπέρου ἢ ὅτου δὴ λέγεται περιτροπή* becomes "the most vicious of circles". He takes this freedom mainly in the literary as opposed to the philosophical parts of the dialogues, although in one philosophical passage he tells us that since the argument is highly compressed and obscure he has interpolated additions into the translation. In general, the rendering is pleasant to read, faithful to Plato's spirit, and trustworthy for the contemporary epistemologist who wants to know what Plato's theory of knowledge really was. For the Greek scholar Professor Cornford has added a number of notes explaining his translations and his readings and suggesting several new emendations.

The rest of the book is a running interpretation, interspersed throughout the translation and dividing it into sections averaging a page or two in length. Whereas in the translation Professor Cornford has tried to imitate current English, in the interpretation his preoccupation

has been to avoid reading any later conceptions into his author and to read out those that previous commentators have inserted. "The commentary attempts only to interpret Plato from his own writings and those of his forerunners and contemporaries, and accordingly avoids, so far as possible, the misleading jargon of modern philosophy." He argues, against a suggestion of A. E. Taylor's, that Plato's dialectic is not what is now known as "Formal Logic". He argues very convincingly that "the most important kinds" of the *Sophist* have no resemblance to any entities called "categories" by Aristotle or anyone else, and that "no satisfactory account of the relations of Platonic Forms can be given in terms of Aristotelian logic".

In his sketch of the relations of the Forms to each other he combines into one doctrine what the *Republic* says about the Form of the Good, what the *Sophist* says about division and about the communication of the kinds, and what the *Timaeus* says about the "Living Creature that truly is"; and his main point is perhaps that, whereas for Aristotle the higher we ascend in the hierarchy of species and genera the further we are from full reality, for Plato the richest content belongs to the highest Form.

This combination of three very different dialogues illustrates Professor Cornford's tendency to find self-agreement and not self-correction in Plato's works. It appears that in ontology and epistemology Plato's only self-correction came when in the *Sophist* he declared that the real world consisted *not merely* of Forms but also of "life, soul, intelligence, and such change as they imply". Otherwise his development in these fields consisted only of a switch of interest from the relation between Forms and things to the relations among Forms themselves.

The same harmonizing point of view appears in Professor Cornford's answers to the two problems that most vex the ordinary reader of these dialogues.

The ordinary reader of Plato is puzzled to know, in the first place, what has become of the Forms in the *Theaetetus*. Professor Cornford replies that they are deliberately excluded from this dialogue in order to demonstrate that without them knowledge is impossible. In other words, the *Theaetetus* gives thorough proof of the assertion made in the *Parmenides* that without the Forms there can be no philosophy. "The purpose of the dialogue is to examine and reject this claim of the sense-world to furnish anything that Plato will call 'knowledge'." "Plato is determined to make us feel the need of his Forms without mentioning them." Professor Cornford works out this hypothesis in detail throughout his commentary. One of its most interesting consequences is that the theory of perception outlined in the *Theaetetus* is Plato's own; for if the aim was to shew that perception does not yield knowledge it would be useless to argue from a false account of per-

ception. This conclusion would certainly be a large addition to our knowledge of Plato's doctrine, since the *Timaeus*, while it has a good deal to say about the physiology and psychology of perception, scarcely touches on the philosophy of the subject.

The other problem that especially vexes the ordinary reader of these dialogues is whether Plato is speaking of Forms when he discusses Being and Same and Other in the *Sophist*. Professor Cornford answers that he is. His main reason for this answer appears to be its success in leading to a consistent and probable interpretation of Plato's theory of knowledge as a whole, but he also argues that Plato uses the word *Kind* or *Genus* as a synonym of *Form*. In general it seems to be his view that, wherever Plato talks about something that we should say was obviously a universal rather than a particular, there Plato himself thought that he was talking about a Form; and this view seems to be based on a conception of Plato's later dialogues that must now be briefly noticed.

Professor Cornford apparently regards the *Theaetetus* and the *Sophist* as written exclusively for the Academy and not for outsiders. He furthermore seems to regard the Academy as composed of persons thoroughly convinced of the truth of the theory of Forms stated in the *Phaedo* and the *Republic*, and thoroughly convinced of Plato's conviction of its truth. He does not state these views, but they seem to be involved in his interpretation. If they are true we can easily see how Plato might imply the Forms without stating them, leaving his small circle of readers to fill in the gaps. And this is the assumption that Professor Cornford makes, for he supposes not only that wherever Plato mentions what we should call a universal he thinks of it as a Form, but also that the Forms are to be understood in some places where not even a universal is mentioned. We have seen that they are to be understood throughout the *Theaetetus*. They are also to be understood in the *Sophist's* explanation of false statement: "we must fill out Plato's scheme with elements he has furnished elsewhere and here takes for granted. . . . Plato evidently means the Forms to come in."

This is the explanation of a notion that is likely to puzzle the reader at first. Professor Cornford refers at least five times to "the Platonist"; and the phrase is a permanent instrument of his exegesis, much like A. E. Taylor's "we could hardly be told more plainly". On each occasion we are told that "the Platonist" will interpret some passage in a way not at once obvious to the ordinary reader. The meaning appears to be given in this quotation: "the trained Academic reader, accustomed to think of Platonic Forms." What perhaps remains obscure is why Plato should ever have avoided the mention of the Forms when they were appropriate. The way in which, according to Professor Cornford, they are to be applied to the problem of false statement

seems unlikely to leap to the mind of even the most adept Platonist. The dialogue would apparently require an oral commentary from its author.

Plato's explanations of false statement and false thinking in the *Sophist* appear to the ordinary reader to be without much value. It cannot be said that Professor Cornford makes them seem true or important, but his attitude towards the apparent weaknesses in Plato is greatly preferable to that of some other interpreters. He does not wave them away with a pontifical or cryptic phrase, but admits their existence, goes into them in detail, and sometimes confesses failure to remove them.

This is the most important book about Plato in English since *What Plato Said*. It goes copiously into the difficulties of the ordinary reader and the epistemologist, and deals with them in a clear and straightforward and penetrating way that cannot fail to be useful. At the same time its general interpretation of these two dialogues, and the mass of its new interpretations of special points, will be of great interest to all advanced students of Plato.

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Evolution of Hindu Moral Ideals. By P. S. SIVASWAMY AIYER. Calcutta, University Press, 1935. Pp. 242.

Manu, A Study in Hindu Social Theory. By K. MOTWANI. Madras, Ganesh and Co., 1934. Pp. 261.

The Katha Upanishad. By J. N. RAWSON. London, Oxford University Press, 1934. Pp. 242.

Le Bouddha: Sa vie, sa doctrine, sa communauté. Par H. OLDENBERG. Paris, Félix Alcan, 1934. Pp. 438.

The History of Buddhist Thought. By E. J. THOMAS. London, Kegan Paul, Trench, Trubner, 1933. Pp. 314.

Le Bouddhisme. Par ENTAI TOMOMATSU. Paris, Félix Alcan, 1935. Pp. viii, 292.

La méditation Bouddhique. Étude de sa théorie et de sa pratique selon l'École du Sud. Par G. CONSTANT LOUNSBERRY. Paris, Adrien-Maisonneuve, 1935. Pp. 180.

It is only within recent years that the Ethics of India have been made the subject of detailed investigation and systematic exposition. Mr. J. Mackenzie, with a Christian missionary attitude of the narrower type, in his *Hindu Ethics* (London, 1922), virtually maintained that Hinduism has no real place for ethics, especially social ethics. That position was arrived at by an examination of dominant philosophical systems and literature, and was possible only by neglect of the vast ethical material embodied in lawbooks, epics, dramas, folk-tales, collections of aphorisms, and in popular religious works. Dr.

Washburn Hopkins in his *Ethics of India* (New Haven, 1924) gave what is still the best historical survey of the main lines of ethical thought. Dr. K. S. Maitra's *The Ethics of the Hindus* (Calcutta, 1925) is particularly valuable and distinctive in its treatment of the psychological implications of Hindu Ethics. My former pupil, Professor M. Buch in his *Hindu Ethics* (Baroda, 1921) made a systematic survey of the whole field, classifying numerous types of moral judgments. His work was a beginning of attention to the empirical data upon which any adequate estimate must be based. Mr. Aiyer, in the book listed above, acknowledges his indebtedness to Buch's work and carries on the empirical investigation, emphasizing the stages of historical development. However, his material is drawn chiefly from legal literature and practice and from conventional caste usages. In the past the Hindu has sought justification for moral rules and legal practice in texts of scripture or well established tradition. Yet, in opposition to the traditional view that the scriptures have given an eternal and immutable code of right conduct, Mr. Aiyer shows historically that time after time adaptations and modifications have been made in consideration of varying conditions. He does not maintain that there are no universal ethical principles, but that the practical rules have undergone and are undergoing evolution. Dr. Motwani's book also is an empirical survey limited to the Code of Manu and showing its essentially sociological character. Both Mr. Aiyer and Dr. Motwani treat of the ethical aspects of family and political organization, of caste groups, law, and many details of social life. Their work provides ample evidence that though dominant Hindu metaphysics may apparently be inconsistent with widespread ethical ideas, the latter have not been rejected by philosophers nor their discussion neglected. It is clear that the fundamental concept is that of society as an organism in which the rights and duties of individuals vary in accordance with their places in the whole. The position is analogous in some respects to those of Plato and of F. H. Bradley.

The ethical is, nevertheless, from the Hindu point of view something secondary, an affair of temporal social relations in earthly existence. The fundamental ideal carries us beyond those, and the consideration of that ideal is the chief concern of the Upanishads. In selecting the Kaṭha Upanishad for special study Mr. Rawson has made an excellent choice. It contains not only a characteristic Hindu exposition of the nature of Deity, but also a defence of immortality, and is one of the two earliest Upanishads to indicate the attitude of Yoga as practice of contemplation and attainment of spiritual unity. Mr. Rawson gives the text, a translation, a running commentary, critical expositions of fundamental principles, and a survey of questions of relevant historical import, the whole constituting an impressive piece of work. Though he started his study under the influence of Śaṅkara's monistic inter-

pretation he has arrived at the view that the Upanishad is definitely theistic, not recognizing the doctrine of illusion and thus differing from the acosmism of Śaṅkara. He contends also that the Katha doctrine of Yoga is not one of suppression and of trance but of communion, "the yoking of our individual powers with the higher, essential Self, which is their basis as it is the ground of the reality of the whole universe". It is worth noting that, on good grounds, Professor Ranade suggests interesting similarities between this Upanishad and the philosophy of Plato, (*Constructive Survey of Upanishadic Philosophy*, Poona, 1926, 262f).

The main motive of Buddhism has been one of practical redemption and is fundamentally ethical, and this has been kept in the foreground in Oldenberg's work, which first appeared in Berlin in 1881. Oldenberg died in 1920. The 9th German edition (1921) has been used in the present (fourth) French edition. This vitality of the work, together with the fact that Dr. E. J. Thomas in the latest authoritative life of the Buddha (*The Life of Buddha as Legend and History*, London, 1927), criticizes it only with regard to a few comparatively minor points, is evidence of its enduring worth. Oldenberg was a close student of the Pali texts. Dr. Thomas says that the recent study of the Chinese and Tibetan Canons has led to the recognition of the first importance and antiquity of the Pali, though it should not be trusted exclusively. Oldenberg assumes an attitude of scepticism to the Lalita-Vistara, similar to that of Thomas (*op. cit.*, xvii). Readers of this *Review* will be most interested in the second part of Oldenberg's treatise: the exposition of Buddhist doctrine. For though the Buddha's aim was practical and he regarded the prevailing speculative theories of India as "un sentier d'opinions, un fourré d'opinions, une djangle d'opinions, un jeu théâtral d'opinions, une entrave d'opinions" (230), Buddhists nevertheless embarked on earnest and continued reflection on the nature of suffering and redemption from it. Their subtle developments of thought must in their turn be described as speculative theories. An account of these is given in Dr. Thomas' volume. Thus, in the Abhidhamma School the general conception prevails that "existence does not consist of a primary substance whether material or spiritual, but of a number of elements, dhammas. The classification of these and the problem of their interrelation form the primary question" (161-2). Of the doctrine of "momentariness" emphasized in my previous survey (this *Review*, March, 1935, 198) Dr. Thomas says it was a late development belonging "rather to the history of Indian logic and natural science than to the history of Buddhism". The question however may reasonably be asked whether it is not implicit in early Buddhist descriptions of experience, although the temporal form of expression may have been late (see 218). The conception of a supramundane

existence, apparently non-temporal, upon which Dr. Thomas seems to place much emphasis, may also have been late. His interpretation of the doctrine of the void as not "that all is relative, but that all is relative to an absolute" (217), gives an opportunity of applying the doctrine of momentariness simply to the relative. Lack of space prevents me from even a brief outline of the interesting developments of Buddhist thought. Dr. Thomas's work is the only one of its kind in English: he writes as a recognized authority in this field and his literary style is very attractive. The book will probably remain for many years the standard treatise on the subject in English.

Professor Tomomatsu's book is very disappointing. It contains nothing new on the subject. On the one hand it seems to be an appeal for a practical revival of Buddhism in Japan, and on the other a claim that there is already such a revival. The chief value of the book is its suggestions concerning the various methods with which Buddhism should be studied. He emphasizes the fact that Buddhism has been presented and practiced in two forms, one for and by the monks and nuns, the other for and by laymen. In studying the vast historical material of Buddhism this fact should be kept in mind. Mr. Lounsberry's book is a very useful one in that in it is brought together material from various sources concerning the forms of meditation among Buddhists. A perusal of it by those who think Buddhism is simply a form of ethics, in the ordinary sense of that term, should convince them that right conduct and right logical reflection are but preliminaries towards the attainment of a state which may not unreasonably be described as a form of mystical intuition.

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Idealismus. Jahrbuch für die idealistische Philosophie, Band I. Herausgegeben von ERNST HARMS. Zürich, Rascher & Cie, 1934. Pp. 280.

This book, composed of contributions by eminent European idealists arranged in the form of symposia, is the first volume of a new *Jahrbuch* which, according to the Introduction, plans to welcome to its pages every variety of philosophy, whether nationalistic or not, as long as primacy is accorded to Spirit, and to exclude only occultism, relativism, and materialism. This first volume was ready for the press in 1931, it appears, but the storms and convulsions of social life in Central Europe in the following year, the death of certain contributors and the refusal of others to participate, forced postponement.

The four symposia on "The Ego", "Being", "Spirit", and "The Absolute" are not in the manner of the Aristotelian Society, since there is no give and take between the participants. Proceeding from his own point of view, each endeavors to compress his main doctrines,

expounded in larger works, into the short space allowed him. It is perhaps this limitation which explains the lack of argument in the book, which often reads like a philosophical testament. Perhaps, too, the type of argument employed in the far-flung, massive system of Hegel is no longer so persuasive, and there is little to take its place. None of the contributors, at any rate, seems inclined to defend or to imitate Hegel in particulars, however much they admire him in general. There is, of course, a tendency to minimize the importance, and to restrict the field, of science. Also, as in all contemporary German philosophy, empiricism and historical materialism are eschewed and the play of ideas and dignitatives goes on unimpeded.

The first symposium, "Das Ich", begins with Hans Driesch's exposition of what he calls "the primordial I". This I *does* nothing and *is* nothing, but it *has* experiences. About all we can say is, "the I is the having-I". The question whether Being can be attributed to this denuded I is countered with the traditional charge of ambiguity. I am, the lion is, God is, etc., represent different uses of "is", rarely distinguished. Yet in "a certain not further definable sense" of the word "Being", the primordial I is. Subject-object, the soul, and the psycho-physical person are all derivative, but their derivation in this essay is neither systematic nor novel.

John Laird, the only realist represented in the *Jahrbuch*, makes a witty attack on Stout's assertion that "a purely immaterial soul is an invention of metaphysicians, and foreign to the commonsense of mankind at all stages of culture". Laird shows that metaphysics is not necessarily involved and that the nullibist can easily escape from Stout's argument. But Laird himself is no nullibist. He cannot believe that selves are literally nowhere.

Nicolai Lossky, in "The Human Ego as Object of Mystical Intuition", affirms the reality of an absolutely individual I, free of space and time. Being a substantial agent, the bearer of "super-qualitative force", the I stands above the determinateness of events and the abstract Ideas, and can only be known by mystical intuition. This is what Kant failed to see in the first *Critique*. This intuition requires a certain catharsis of the soul. To rise to "the divine world" an effort must be made to overcome the limitations of the psycho-physical world and to stifle that selfishness which, by splitting the personality into separate interests, disturbs contemplation of the substantiality of the I. When modern psychologists deny this substantiality, it merely reveals the wretched moral state of these psychologists. "They are lost men", Lossky quotes with approval from P. Florensky. The antidote to this selfishness is love; hence, love of God. If men fail to contemplate the substantiality of the I, concentrating typically upon their personal welfare, the result is materialism or positivism. The result may be far worse: egocentricity, ambition, lust for power, super-

human pride—though they may release themselves in outwardly praiseworthy activity, scientific, and artistic creation, or in striving for social justice, reveal their egoistic motivation in a failure of "symphonic" creation or in a deep unconscious hatred of God. Here the author assumes a familiar Russian posture reminiscent of Dostoevsky and Solovieff, and the practical, tendentious character of his mystical doctrine is plainly apparent.

T. E. Jessop, contributing the first article on "Being", celebrates, as contrasted with barren dualism, the rich, multifarious, all-embracing unity of Being and Reality in Hegel.

Otto Kröger beseeches all philosophers to drop their unnecessary differences and agree upon the following articles: (1) that one essence runs through all appearances, (2) that knowledge is of the same essence as experience, and (3) that all appearances or manifestations of Being possess the same *Wertigkeit*. He implores them, that is, to become idealists of a sort, and as if to show how easy it is, he identifies being and consciousness without further ado. Three essential aspects are present throughout consciousness, hence throughout being, namely: space, time, and feeling, that is, feeling of freedom—a degree of agreement and disagreement among things in space and time.

Carlo Sganzini in "Geist und Sein" maintains that between life and spirit there is continuity. It is a current view, he says, that with Logos something new enters human consciousness, that a breach is made in the continuity of life-unfolding. He finds this view upheld by Klages and Scheler. Since Klages and Scheler regard spirit as super-biological and super-subjective, they are really Neo-Averroists, he argues, though he admits that spirit for both writers is the principle of individuation. But if, as with these authors, the continuity between life and spirit is denied, if one decides for spirit against life, the *final* outcome is a position like that of Gorgias, or of Antisthenes and the Megarics. If continuity is accepted we have a continuous series of positings (*Seinssetzungen*) representing Logos applied to life. The continual failure of these positings to agree with life is the dynamic law of life.

Edgar Sheffield Brightman distinguishes four types of immediacy: (1) the completely unmediated, unrelational, non-rational undifferentiated, as illustrated perhaps in bare sensation. This type is impossible. (2) All that is present in consciousness. (3) The third type, passive experience, is also rejected as unspiritual, though why this should disqualify it is difficult to see. Brightman, however, quotes from Hegel: "the seriousness, the pain, the patience, and the labor of the negative are absent from it". (4) The object of contemplation. This view also is rejected as unworthy of the travail and creativity of Spirit, "Spirit" being taken in the usual edifying sense. Although the author favors the second type, he insists, following Hegel, that

thought does not rest in the immediate but must transcend any given level. This is "the ingratitude of thought" (Hegel). "Immediacy", like "Spirit", takes on a euphemistic sense, and worthiness, rather than the probabilities, seems to be the test. Yet the essay, richly illustrated by quotations from spokesmen ranging from St. Peter to Lenin, is highly interesting.

Edgar Dacqué in "Mechanismus und inneres Wesen" argues that external, mechanical explanation does not exclude an unmechanical, inner-rhythmic process revealing cosmic correspondences. Every natural event perceived has an outer and inner side. He considers biological, geological, and other scientific perspectives in an attempt to prove this conclusion which, he says, approaches the astrological mode of thought.

George Mehlis in "Der Geist" makes a series of declarations concerning the Greek and Christian religions, showing a preference for the latter because of its emphasis on love, concerning the state which he thinks is founded on morality, concerning the nation and the people, which he regards as the same, in so far as the former has developed into a great personality. Throughout the whole Hegelian hierarchy, however, the manifesting spirit is held to be transcendent.

Helmuth Plessner in "Die Frage nach dem Wesen der Philosophie" makes an interesting distinction between kinds of philosophy: (1) reformist philosophy which rejects the past; (2) systematic philosophy which includes the past, in subordination perhaps; (3) a view which sees the essence of philosophy in "isms", realism *vs.* idealism, for example; (4) the essence determined by the prevailing philosophy.

The symposium on "The Absolute" begins with Simon Frank's essay, in which he assures us that The Absolute is the only object of philosophy, since relative knowledge is the province of science. Unfortunately, the Absolute by definition is unknowable by conceptual knowledge. The solution of this carefully prepared difficulty is mystic intuition. Cusanus' doctrines of ignorance, the coincidence of opposites, uncomprehending comprehension, etc., improved by Kantian transcendental additions, assures the ecstasy (*raptus*). Not only contradictories, but different pairs of contradictories, coincide with apparent ease in the Absolute, which, however, is far from being the null-class.

R. F. Alfred Hoernlé seems to overshoot his mark in defining an absolutist as one who takes the whole universe as his object, since it would follow that non-absolutistic metaphysicians are non-existent. But his article makes a number of valuable distinctions between different types of idealists and explains clearly why the problem of monism *vs.* pluralism is secondary.

Jean Wahl's "Sur l'absolu" is a series of philosophical aphorisms compressing extended observations into single trenchant sentences.

Thus the Absolute is represented as repose which is inseparable from movement—hence dialectic (Platonic, Hegelian). Again he epitomizes Nietzsche's eternal recurrence as "the desperate effort to place the Absolute in the ephemeral, to the great fright of men and the great joy of the superman".

The *Jahrbuch* contains also a section called *Persönlichkeiten* reviewing the writings and personalities of three famous philosophers: Dilthey, Bradley, and Ravaisson. The volume concludes with a long section of reviews and bibliographical notices concerning idealistic philosophers and books.

V. J. McGILL

HUNTER COLLEGE

Relativity, Gravitation, and World-Structure. By E. A. MILNE. New York, Oxford University Press, 1935. Pp. x, 366.

One of the most fascinating problems of the present time is that of the general structure and history of the universe as a whole. This is also, however, a problem which will doubtless long remain in a highly speculative stage. The present book describes a new hypothesis proposed by Professor Milne with an exposition of the *philosophical* reasons that convince the author of its truth. Whether one finds these reasons convincing or not, it appears that the astronomical consequences drawn from the hypothesis agree at several important points with observed facts and are nowhere in conclusive disagreement with them. The book is full of reasoning whose looseness and boldness call to mind the scientific writings of past ages, and it is written in a lively style that lures the reader on, whether he elects to skip or to follow the mathematical developments.

The author's new hypothesis, a refined form of Einstein's "cosmological principle", asserts that in its broad outlines the universe is such as to present the same aspect to an observer stationary relative to the matter at any point in it. It thus represents cosmological relativity carried to perfection. Working out the theory first for an ideal universe which consists of matter distributed continuously and in exact accord with the principle, the author shows that in the experience of any given observer the universe must have started at a certain moment all concentrated at a point; then at any later time this observer will see it as contained within a bounding sphere that is expanding with the speed of light, and every part of the universe will be receding from him with a lesser velocity that is constant in time and proportional to the distance from him. Events seen by this observer as occurring from distant points correspond, however, to earlier times in the experience of observers at those points; by observing events very close to the apparent spherical boundary of the universe our

observer can indeed view events that have the character of those which happened in his own neighborhood at epochs very close to the beginning of the world. Since the universe would thus exhibit as a whole to any observer neither a definite age nor a definite position, each observer being in his own experience at its center, the author concludes that his universe, "although describable in the space and time of an observer is" itself "neither *in space* nor *in time*; to assert either would be meaningless".

Application to the actual universe is then made by supposing that the galaxies which appear in the astronomer's telescope as nebulae behave approximately as do particles of matter in the ideal universe. Thus are explained the apparent motion of recession of nearly all nebulae with a velocity proportional to their distance from us, and also the fact that as telescopic technique improves an ever increasing number of such nebulae are observed, for in the author's universe the matter is in reality infinite in amount, being condensed as seen by any observer in the neighborhood of the bounding sphere.

In regard to the author's criticisms of writers on Relativity it may perhaps be objected that physicists are not really quite so naive about coordinates and other matters as the author's words imply; they merely do not always state explicitly all steps in their reasoning as the author so charmingly does in this book. Furthermore, acute thinker as Eddington is, he did not create Relativity and is not a physicist and so should be quoted with great caution as a typical authority on such matters.

E. H. KENNARD

CORNELL UNIVERSITY

DESCRIPTIVE NOTICES

Myself. By JOHN ROGERS COMMONS. New York, The Macmillan Company, 1934. Pp. x, 200.

Although far less impressive than the famous autobiography of another great economist, Commons' candid life-story has a similar purpose. It is a forthright attempt to explain just how and why and when he formulated his social theories. Out of the wealth of his varied experience, he has selected a limited number of episodes, and in frank and unreserved fashion has shown how pleasant as well as unfortunate events nurtured the basic ideas which he ultimately wove together into his eclectic economic theory. Those who seek to understand his body of ideas should therefore begin by reading his summary essay on "The Place of Economics in Social Philosophy" (*Journal of Social Philosophy* 1, 7-22), follow this with *Myself*, and then turn to his systematic work on *Institutional Economics*. The autobiography is essentially instrumental, and as such a vital part of Commons' life-work. Although written "in sorrow and doubt" this testament is really a message of hope. An unadorned account of what one "pragmatic theorist" has done to solve social problems and to advance social thought must perforce give new courage to every social worker and to every social theorist!

E. A. J. JOHNSON

CORNELL UNIVERSITY

Spinoza nel terzo centenario della sua nascita. Supplemento speciale al volume XXV della *Rivista di filosofia neo-scolastica.* Milano, Società Editrice "Vita e Pensiero", 1934. Pp. vi, 212.

Spinoza e due antecedenti italiani dello spinozismo. Prefazione di *Giuseppe Saitta.* Per FAUSTO MELI. (Studi di lettere storia e filosofia pubblicati dalla R. Scuola Normale Superiore di Pisa, Vol. III.) Firenze, G. C. Sansoni, 1934. Pp. viii, 200.

The recent Spinoza tercentenary was the occasion in Italy for a critical symposium from the neo-scholastic viewpoint, like those devoted to Kant in 1924 and Hegel in 1931 (*cf.* this *Review* XLII 544 f.). It is these three men "who have caused modern thought to stray from the path which alone leads to the knowledge of God, and which perennial philosophy had clearly marked" (5). Spinoza is contrasted with St. Thomas and with Cusanus (who should not be called his forerunner), and compared with Kant, Hegel, Schopenhauer, and the contemporary idealists Croce and Gentile; there are studies of his relation to modern physics, his political philosophy, and his "nullification of history"; and lastly, an attempt to explain his thought by his life and to find in the loneliness of his death a symbol of the failure of his philosophy. The preface to the volume ends with this topical footnote: "It is a singular fact that antisemitic Germany owes an essential part of its classical philosophy to this alien Jew, who refused the Heidelberg chair of philosophy offered him by the Palatine Elector, and who had no liking for his admirer, the diplomatist Leibniz, counsellor for various German courts."

Fausto Meli, who died in 1931 at the age of twenty-two, also sees in Spinoza the great founder of modern thought, but with a devout gratitude like that of Lucretius to Epicurus. The chief interest of this volume of his essays, published by one of his teachers, lies in his view of Socinian rationalism as Italy's contribution to the Reformation, and as the true prelude to the rationalism of Spinoza and of subsequent philosophy. This view is worked out at length in an essay on the religious and political doctrines of Fausto Socino and their further development in the seventeenth century, and illustrated in a brief sketch of Jacopo Aconcio. The third and longest essay is a study of "the rationalistic metaphysics of Spinoza".

M. H. Fisch

Western Reserve University

Max Weber und die philosophische Problematik in unserer Zeit. Von Artur Mettler. Leipzig, S. Hirzel, 1934. Pp. 164.

In the first part of his study the author expounds Weber's denial of the possibility of a philosophical synthesis uniting the manifold interpretations of the universe and the polytheism of values. In accord with Rickert's concept of *Wertbeziehung*, these values correspond to (without being deducible from) the system of the empirical sciences. Hence philosophy is restricted to axiomatizing ethical and metaphysical pluralism. In the second part this position is confronted with a series of systems of modern philosophy. These either deny the existence of the pluralism asserted by Weber, as Hegel, Marx, or Wundt in metaphysics, Spinoza and Kant in ethics, and Kierkegaard in the philosophy of religion, or they attempt to construct a synthesis, as R. Eucken and N. Hartmann in metaphysics, H. Barth in ethics, H. Rickert and K. Jaspers in the philosophy of religion.

N. C. Leites

Cornell University

La philosophie de Newman. Essai sur l'idée de développement. Par Jean Guitton. Paris, Boivin et Cie, 1933. Pp. xlii, 244.

In a well-made, well-written book, Dr. Guitton succeeds where success might not have been expected. Offhand we think of Newman as a poet embodying generalizations concretely, not as a systematic philosopher. His philosophy is, of course, theological. It is here presented with little evidence of Newman's self-deceit by gradation and through imagery. An Introduction (ix-xli) is followed by four chapters, "*Religion et dogme*", "*Religion et tradition*", "*Religion et progrès*", "*Portée de la notion de développement*", and these by three Appendices, the third (183-91) a hitherto unpublished letter of Newman to Joulkes on the place of the idea of development in the motives of his conversion. A useful Bibliography of Newman's writings (193-230) precedes the Index of nine pages and the Table of Contents.

Lane Cooper

Cornell University

Essai sur les conditions du progrès moral. Par MARCEL LENGLART. Paris, Félix Alcan, 1934. Pp. 170.

The author's primary concern is not with the fact of moral progress, but with its conditions. Factors which condition progress are (1) environmental: economic development, social and political organization, science, art, literature; and (2) personal: endocrine glands, blood, nutrition, disposition, intelligence, affective nature, tradition, conscience. Moral progress is understood as the increasing realization of human capacities, well-being, and happiness. In order to be moral, man must be satisfied not with the good but with the better. "Progress will be realized only if the effort of personal reflection, the intimate dispositions of the individual, above all his will, enter into play and assure morality of action." The author has made a bold attempt to synthesize divergent points of view in a humanistic treatment.

QUINTER M. LYON

STATE TEACHERS COLLEGE
MINOT, N.D.

Pragmatism and the Crisis of Democracy. By CHARLES W. MORRIS. Chicago, The University of Chicago Press, 1934. Pp. iv, 26.

Between the philosophies of blood and brawn, which have found their political expressions in fascism and communism, Professor Morris seeks a middle ground, which is for him pragmatism. In the social thinking of Mead and Dewey he finds the authentic philosophy of democracy, its task being to carry the experimental method into social and moral fields. Pragmatism is undeniably an expression of the democratic way of life: of the easy adaptibility of means to an end not too clearly defined. But it is not the exclusive expression, nor the most fruitful, of the democratic spirit. It is of the very essence of democracy that it be expressed in many ways: in the empiricism of Mill and the idealism of Green and Bosanquet no less than in the pragmatism of Dewey or of Mead.

C. M. WILTSE

WASHINGTON, D.C.

Dictionnaire de spiritualité. Ascétique et mystique, doctrine et histoire. Publié sous la direction de MARCEL VILLER. Fascicules III et IV. Paris, Gabriel Beauchesne et ses fils, 1934 and 1935. Pp. 641-1280.

This part of the *Dictionnaire* covers the field from "Anglaise" (spiritualité) to "Basile" (Saint). The work continues to reveal a high order of scholarship and it includes asceticism, mysticism, doctrine, and history. One of the most important articles in the present series is that on "Attention", written by R. Verney. It fills twenty columns and deals with the place of Attention in the religious life, its rôle in prayer and meditation, its varying degrees, the abuses of it, and the methods of training it. Another article especially worthy of notice is the extensive study of St. Augustine, written by Charles Boyer. It contains a valuable treatment of St. Augustine's mysticism, under the heading of Contemplation, which is the right rubric for it. In Volume III the articles on "Apatheia" and "Ascèse", or "Ascéticisme", deserve especial mention. Many of the foremost Roman Catholic scholars in Europe are among the contributors to this important Dictionary.

RUFUS M. JONES

HAVERFORD COLLEGE

Sinn, Bedeutung und Auslegung der Heiligen Schrift in Hegels Philosophie. Von Otto Kühler. Leipzig, S. Hirzel, 1934. Pp. xii, 112.

It is well known that for Hegel there is no conflict between religion and philosophy; both are manifestations of the Spirit. In religion the Spirit reveals itself in the form of images and symbols, in philosophy in the form of concepts. The concept is, of course, superior to the image, but it is accessible only to the few. The philosopher accepts the Bible as a great document but he does not need it. The Christian doctrines are true in so far as their symbolism may also be expressed in the language of concepts. There is neither room nor need for a special science of theology apart from philosophy.

Peter Epp

Ohio State University

La libertà umana nella filosofia contemporanea. Per Avv. Vincenzo Cavallo. Napoli, Libreria Editrice Francesco Perrella, 1934. Pp. 474.

Here is another big book on the apparently inexhaustible topic of the freedom of the will, the work of a professor of law in the University of Naples. Its main concern, however, is not with legal responsibility but with the ancient metaphysical problem. The conclusion is indeterminist. Like Croce, Gentile, and Aliotta, who provides the introduction, Professor Cavallo is seeking escape from the oppression of the human spirit which he thinks has been brought about by the domination of physical science. The chief previous attempts at escape he holds to have been that of Boutroux and Bergson on the one hand, and that of Croce and Gentile on the other. He rejects the first because it grants too little to the reign of law, the second because it grants too much. He holds that we are determined so far as we act impulsively, and also, I gather, so far as we think rationally, but that we possess at the moment of choice a freedom revealed to us by intuition and confirmed by our sense of duty. Of this freedom there are many grades, for it is only slowly achieved; and punishment, which is justly retributive, must be proportioned to the degree of freedom and therefore to the degree of guilt. The book is an able and passionate plea for human liberty. Need one add that it moves altogether in the realm of speculation and keeps clear of practical politics? Ethiopia is nowhere mentioned!

Brand Blanshard

Swarthmore College

Science et loi. Par Abel Rey et les autres. Paris, Félix Alcan, 1934. Pp. vi, 228.

This is a report of the papers and discussions of the fifth "Semaine" of the "Centre Internationale de Synthèse". Eminent representatives of the various domains of scientific inquiry attempt to agree in regard to basic ideas. Most of the participants reject the suggestion that the Heisenberg principle of indeterminacy requires the renunciation of determinism, which is a "necessary and legitimate postulate of research in all the sciences". A view somewhat at variance with this is found, to be sure, in the paper on "Chance in History"; but in the ensuing discussion it becomes clear

that "chance" (*hasard*) need not be defined in such a way as to exclude determinism.

RAY H. DOTTERER

PENNSYLVANIA STATE COLLEGE

Roberty. Le positivisme russe et la fondation de la sociologie. Par RENÉ VERRIER. Paris, Félix Alcan, 1934. Pp. 234.

Considering his European influence and the volume of his writing, Eugène de Roberty is singularly little known in this country. He was born in Russia in 1843, numbering among his grandparents a Russianized Frenchman, a Spanish woman, and two Tartars. Educated at Jena and at Heidelberg (where he was expelled for planning a pistol duel between conservative and liberal students), he lived chiefly in Russia until 1886, when the condemnation of his work *Le passé de la philosophie* by the state church led him to abandon publishing in Russian and to spend his later life largely in Paris. He was assassinated in his Russian home under somewhat mysterious circumstances in the first year of the War. Roberty was a left-wing positivist. He has been called "the metaphysician of sociology", but the name fits pretty badly, for though he wrote on philosophy extensively, it was chiefly to show that philosophy, as traditionally conceived, was on the wrong track. Its only profitable method was historical and sociological, and if this method was adopted, the conclusions of philosophy could be explained away. Even the doctrine of the unknowable he objected to as over-metaphysical. As his philosophy is rooted in sociology, so his sociology is rooted in biology; "intelligence and all the initial forms of sensation are purely and exclusively biological phenomena". This position seems less promising now than it did in the days of Roberty's masters, such as Littré, Comte, and Lewes. But such as it is, it receives here an interesting statement.

BRAND BLANSHARD

SWARTHMORE COLLEGE

Selections from Early Greek Philosophy. Edited by MILTON C. NAHM. New York, F. S. Crofts and Co., 1934. Pp. xii, 220.

This compact little book presents selections of source-material from Thales to Democritus, with an introduction taken from Theodor Gomperz *Greek Thinkers*, Vol. I, describing the religious background. Perhaps the chief merit of the book is the considerable selection of material concerning the atomism of Democritus, material sufficently extensive to give the student a proper opinion of Democritus' philosophical sagacity. The binding of the volume is unusually neat and durable.

J. R. CRESSWELL

WEST VIRGINIA UNIVERSITY

The following books have been received:

The Logic of William of Ockham. By ERNEST MOODY. New York, Sheed & Ward, Inc., 1935. Pp. xiv, 322.

William Torrey Harris. Edited by EDWARD L. SCHAUB. Chicago, The Open Court Publishing Co., 1936. Pp. viii, 136.

Philosophy and Faith. By DOROTHY M. EMMET. London, Student Christian Movement Press, 1936. Pp. 164.

Philosophical Essays for Alfred North Whitehead. By nine former students. New York, Longmans, Green and Company, 1936. Pp. viii, 248.

Aristotle's Physics. A revised text with Introduction and Commentary by W. D. Ross. New York, Oxford University Press, 1936. Pp. xii, 750.

Faith and Reason: The Conflict over the Rationalism of Maimonides. By JOSEPH SARACHEK. Williamsport, The Bayard Press, 1935. Pp. xiv, 290.

Religion of Reason. By TRUDE WEISS ROSMARIN. New York, Bloch Publishing Company, 1936. Pp. xii, 196.

Mencius. Translated by LEONARD A. LYALL. New York, Longmans, Green and Company, 1932. Pp. xxviii, 278.

A Bibliography on the Survival of the Classics. I. Edited by The Warburg Institute. London, Cassell & Company, Ltd., 1934. Pp. xxiv, 334.

The Immutable Law. Understood to be dictated by THOMAS TROWARD—received by JANE REVERE BURKE. New York, E. P. Dutton & Co., Inc., 1936. Pp. xii, 118.

Christianity and Personality. By JOHN WRIGHT BUCKHAM. New York, Round Table Press, Inc., 1936. Pp. xi, 192.

Consciousness in Neo-Realism. By BINAYENDRANATH RAY. New York, Oxford University Press, 1935. Pp. xvi, 154.

Why Democracy? By JAY WILLIAM HUDSON. New York, D. Appleton-Century Company, Inc., 1936. Pp. xvi, 246.

La sociologie allemande contemporaine. Par RAYMOND ARON. Paris, Félix Alcan, 1935. Pp. iv, 178.

Platon. Par LÉON ROBIN. Paris, Félix Alcan, 1935. Pp. viii, 364.

Histoire des dogmes, V. La grace actuelle, les sacrements, Baptême, Confirmation, Eucharistie, Mariage. Par JOSEPH TURMEL. Paris, Les Éditions Rieder, 1936. Pp. 580.

Les aspects de l'image visuelle. Par RENÉ DURET. Paris, Boivin et C^ie^, 1936. Pp. vi, 150.

Essai sur la personne. Par O. LEMARIÉ. Paris, Félix Alcan, 1936. Pp. iv, 126.

L'évolution de la physique et la philosophie. By various authors. Paris, Félix Alcan, 1935. Pp. vi, 152.

La poésie et le principe de transcendance. Par MAURICE DUVAL. Paris, Félix Alcan, 1935. Pp. 450.

Religion, superstition et criminalité. By MAURICE DUVAL. Paris, Félix Alcan, 1935. Pp. 382.

Humanitätsidee und heroisiertes Porträt in der Englischen Kultur des 18. Jahrhunderts. Von EDGAR WIND. No date, publisher, or place given. Pp. vi, 156-230, plates XIII-XXX.

Die Lehre von der Identität in der deutschen Logik-Wissenschaft seit Lotze. Von ROLF W. GÖLDEL. Leipzig, S. Hirzel, 1935. Pp. xxvi, 466.

Das Eine und die Welt. Versuch zur Interpretation der Leibniz'schen Metaphysik. Leipzig, S. Hirzel, 1936. Pp. viii, 116.

Seneca. Historisches Trauerspiel. Von FRANZ KARL MOHR. Reichenberg, Gudefendeutscher Verlag Franz Kraus, 1935. Pp. 128.

Teologia I. By TOMMASO CAMPANELLA. Edizione critica con introduzione appendici e una tavola a cura di ROMANO AMERIO. Milano, Società Editrice "Vita e Pensiero", 1936. Pp. xl, 462.

NOTES

The following is a translation of part of a communication received from M. Émile Bréhier, the chairman of the organizing committee of the ninth international congress of philosophy.

Themes of the Congress

"1. The present state of Cartesian studies.
2. The unity of knowledge; method and methods. The history of the problem. Its present state.
3. Logic and mathematics.
4. Causality and determinism in physics and biology. Probability and statistics.
5. Reflective analysis and transcendence; the idea of the soul; the soul and the body; the soul and God.
6. Value, standards (logical, moral and legal, aesthetic) and reality.

"All papers intended for the Congress must reach the secretary by February 1, 1937, at the latest. They should be typed, and should be in English or French or German or Italian. They must not exceed 2,500 words, or about 8 pages of ordinary typescript. They will be printed a month in advance and distributed to all members when the congress opens. Ultimately they will be collected into a volume.

"The committee urgently requests that all who intend to present a paper to the congress will send the title of it, *before March 1, 1936*, to M. R. Bayer, 26, avenue Theophile-Gautier, Paris (16e). (Telephone: Aut. 06-28).

Sessions

"No definitive program of the sessions of the congress can be established until the papers have been received. Some of the sessions will be plenary and others sectional. The papers will last for a quarter of an hour; they are printed in order to allow more time for the discussion. The maximum time allowed for each comment on the papers read will be five minutes.

Material Organization

"The membership fee has been fixed at 80 French francs for active members and 40 francs for associate members. Active members may take part in the exercises of the congress, and they alone will receive the volume containing the Proceedings. Associate members are auditors; they enjoy all the other advantages accorded to active members.

"The committee of the congress is in communication with the general commissariat of the *Exposition Internationale* to be held at Paris in 1937. In addition to free entry to the *Exposition* for all members of the congress during the whole period of the congress, and a reduction of 50% for their families, the members will enjoy all the privileges extended by the commissariat to visitors to the Paris *Exposition*.

"Among these advantages, the following are already secured: a *reduction* of 60% on all French railroads for the journeys to and from the congress; a reduction of from 40 to 50% on all journeys made on French soil during

the members' stay in France; special receptions, gala evenings in the theatres or at the *Exposition*, organized for them by the general commissariat.

"In addition, we propose to approach foreign railroads in a similar manner with a view to obtaining substantial reductions. We shall also request that visas be furnished gratis to those coming from countries for which a visa is required. Finally, since accommodations will be particularly important at the dates chosen for the congress, we shall issue a list of the principal hotels of the capital by categories, with their average prices; and we shall assure ourselves of the close assistance of one or more travel-agencies, who will provide all the members with the necessary supplementary information, and will, if requested, make all arrangements for their lodgement.

"A committee of welcome is in process of establishment. Its object will be precisely to facilitate and render agreeable the stay of the families of our guests in the capital.

For the organizing committee:

Émile Bréhier, *chairman.*
40, rue de l'Yvette, Paris (16e)
Telephone: Aut. 94-82."

The Second International Congress for the Unity of Science will take place in Copenhagen, June 21-26, 1936. The central topic will be the relation of physics and biology (including psychology), with especial emphasis upon the concept of causality. A small number of invited speakers will provide the context for a general discussion. Niels Bohr will participate in the Congress.

Inquiries and notices of intended attendance at the Congress may be directed to the Secretary, Dr. Otto Neurath, Mundaneum Institute, 267 Obrechstraat, The Hague, The Netherlands. The subscription for active membership is 100 francs.

The International Committee in charge of the annual Congresses now consists of: M. Boll, Niels Bohr, P. W. Bridgman, Bonnet, Carnap, E. Cartan, J. Clay, M. R. Cohen, F. Enriques, P. Frank, M. Frechet, F. Gonseth, J. Hadamard, P. Langevin, Lashley, Lewis, Lukasiewicz, R. v. Mises, Morris, Rey, Rist, Rougier, Bertrand Russell, Schlick, Stebbing, Woodger.

The Proceedings of the First Congress, held at the Sorbonne in September 1935 and devoted to the general topic of the logic or philosophy of science, are to appear in the early months of 1936 in the form of eight small volumes (Hermann and Co., Paris). A detailed report of the papers and discussions of the Congress appears in volume 5, number 6, of the journal *Erkenntnis* (Felix Meiner, Leipzig). Plans are being made to hold one of the Congresses in the United States within the next few years.

The following is a list of articles in current philosophical periodicals:

MIND, XLV, 177: *M. B. Foster,* Christian Theology and Modern Science of Nature (II); *I. Gallie,* Is the Self a Substance?; *Helen Knight,* Stout on Universals; *A. Sidgwick,* Verifiability and Meaning; *C. R. Marshall,* A Factor in Hypnagogic Images.

PHILOSOPHY, XI, 41: *The Rt. Hon. Sir Herbert Samuel,* New Science and Old Philosophy; *The Rt. Hon. The Earl of Listowel,* The Aesthetical Significance of the Tragic; *John Laird,* Great Thinkers: (VII) Malebranche; *Herbert Dingle,* On the Principles Underlying Professor Milne's Cosmological Theory; *S. Atlas,* The Philosophy of Maimonides and its Systematic Place in the History of Philosophy; *R. E. Stedman,* Sovereignty and the State; *Helen Wodehouse,* Science and the Explanation of Phenomena.

THE MONIST, XLVI, 1: *John F. Butler,* On Definition; *D. M. Datta,* The Windowless Monads; *H. S. Fries,* The Functions of Whitehead's God; *Charles M. Perry,* William Torrey Harris and the St. Louis Movement in Philosophy; *Edward L. Schaub,* Harris and the Journal of Speculative Philosophy; *Harvey Gates Townsend,* The Political Philosophy of Hegel in a Frontier Society; *Kurt F. Leidecker,* Harris and Indian Philosophy.

THE JOURNAL OF PHILOSOPHY, XXXIII, 1 and 2: *Ernest Nagel,* Impressions and Appraisals of Analytic Philosophy in Europe. 3: *Eliseo Vivas,* The Esthetic Judgment; *W. Donald Oliver,* The Concept and the Thing. 4: *Blanchard W. Means,* Freedom, Indeterminacy, and Value; *C. J. Ducasse,* Mr. Collingwood on Philosophical Method. 5: *Robert C. Baldwin,* Teleology and the Idea of Value; Abstracts of Papers read at the Twelfth Annual Meeting of the Pacific Division of the American Philosophical Association, Stanford University, December 26, 27, and 28, 1935.

THE INTERNATIONAL JOURNAL OF ETHICS, XLVI, 2: *Charles E. Merriam,* Putting Politics in its Place; *T. V. Smith,* The Ethics of Fascism; *John R. Reid,* Naturalistic Standards; *Louise M. Rosenblatt,* The Writer's Dilemma: A Case History and a Critique; *F. C. Sharp* and *Philip G. Fox,* "Caveat Emptor"; *D. M. Datta,* The Moral Conception of Nature in Indian Philosophy; *Frank H. Knight,* Pragmatism and Social Action.

THE HIBBERT JOURNAL, XXXIV, 2: *L. P. Jacks,* Collective Security; *René Fülöp-Miller,* The New Revolt Against Reason; *W. Watkin Davies,* By What Authority?; *E. W. MacBride,* The Scientific Atmosphere and the Creeds of the Christian Church; *E. Sylvia Pankhurst,* Women Under Fascism; *E. G. Lee,* Dictatorships and Failure; *Alfred E. Garvie,* Christian Ethics and International Economics; *Baron von Oppell,* The Pleasure of Newness; *Paul-Louis Couchoud,* Is Marcion's Gospel One of the Synoptics?; *R. O. Hall,* Accuracy in the Gospel Records; *C. J. Cadoux,* The Liberal-Modernist View of Jesus; *James Moffatt,* Survey of Recent Theological Literature.

THE JOURNAL OF RELIGION, XVI, 1: *Julius A. Bewer,* The Authority of the Old Testament; *Matthew Spinka,* Acquisition of the Codex Alexandrinus by England; *Chester C. McCown,* The Eschatology of Jesus Reconsidered; *Gilbert Kelly Robinson,* Ethics, Cosmology, and Religious Faith; *Howard B. Jefferson,* The Rôle of Religion in a Changing American Culture; *W. T. Townsend,* The Henotikon Schism and the Roman Church.

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